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4. Archaic Cultures Adjacent to the Northeastern Frontiers of Mesoamerica¹

WALTER W. TAYLOR

BEYOND the northeast frontiers of Mesoamerica lies a desert land. Its cultures, carried by nomadic hunters and gatherers variously called "barbarians," "wild tribes," Chichimecs, are centered on the north Mexican states of Coahuila, Nuevo Leon, and Tamaulipas, extending into adjacent parts of Mexico and Texas (fig. 1). Except for the pertinent parts of Texas, the area lies roughly south of the Rio Conchos (Chihuahua) and the Rio Grande, north of the city of San Luis Potosi, and between the Gulf of Mexico and the eastern skirts of the Sierra Madre Occidental. The southern part of Tamaulipas, south of the Soto La Marina River, was occupied during the later prehistoric periods by obviously Mesoamerican cultures, including the Huastec; therefore, in this region I shall discuss only the more ancient, non-Mesoamerican, or pre-Mesoamerican cultural manifestations.

Physiographically, this vast area may be divided into three major provinces: the coastal plain of the Gulf of Mexico, the Sierra Madre Oriental and its outliers, and

the central Mexican plateau (Tatum, 1931; W. W. Porter, 1932). All these provinces extend across the Rio Grande into Texas, the adjacent portions of which, as has been said about the Trans-Pecos region specifically (W. P. Taylor *et al.*, n.d., p. 2), thus "represent a northward extension of topographical forms and biological resources primarily Mexican in relationships and character." This condition also prevailed in cultural matters.

The coastal plain, beginning with the extensive dunes which line the coastal estuaries, rises slowly from the Gulf to the front ranges of the Sierra Madre in Mexico and to the Balcones Escarpment in Texas. In Mexico, this smooth, monotonous topography is broken only by the isolated mountains of the Sierra de Tamaulipas-Sierra San Carlos and by the strike-ridge of the Ceja Madre in the vicinity of Nuevo Laredo, Tamaulipas. In Texas, there are no mountains at all, except localized irregularities hardly deserving the name. Other than the coastal rivers of Texas, only the Rio Grande and a few short watercourses in coastal Tamaulipas drain the area. Again except in Texas, where rivers constituted barriers,

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drainage lines are short, shallow, and ephemeral. They are not salient features of the landscape, nor were they significant factors in the aboriginal culture ecology. The biota is Tamaulipan, characterized by a flora consisting largely of mesquite and acacia, below and between which grow thorny shrubs and succulents (Goldman, 1951, p. 425).

The Sierra Madre province encompasses the eastern cordillera and its front ranges. Its southern extensions consist of a series of north-south ranges separated by narrow valleys difficult of access. In the north the ranges shift direction toward the northwest and separate to form broader valleys often occupied by playa basins. The life zones range from Lower Austral to Canadian, characterized by floral contexts of mesquite-acacia, then oak-pine, piñon-madroño, and finally fir-aspen (Goldman, 1951, p. 429). The drainage, when not interior, flows east onto the coastal plain and into the Rio Grande. The mountains, mostly of limestone, contain many caverns, caves, and shelters which were used by the aboriginal populations.

The central Mexican plateau is an arid region of playa basins and abrupt, isolated mountain masses. It has a typical basin-and-range topography with some of the higher mountains reaching 9000-10,000 feet. It is included within the Chihuahua-Zacatecas biotic province (Goldman, 1951, p. 421) and mainly within the Lower Austral life zone, exhibiting a flora of mesquite, acacia, ocotillo, creosote bush, and many other desert shrubs and succulents. Some regions are Upper Austral and, in the higher elevations, reach the pines and oaks of the Transition zone. For the most part, the mountains are of limestone and contain many protected, habitable sites.

The amount of culture-historical information from this immense area is small. The aboriginal population, sparse to begin with and not accustomed to political or religious domination or a sedentary way of life, did

not take kindly to mission reduction or the encomienda system. Decimated by disease and fighting, the Indians disappeared rapidly after the establishment of Spanish rule, and none endured long enough to provide ethnographic information in any detail or extent. Archival sources are scarce at best, and what data they do contain are often colored by religious and evangelical motives which reduced their coverage and throw suspicion upon their objectivity and truth (Martínez del Río, 1954; Alessio Robles, 1927, 1938; Beals, 1932).

Ethnographic evidence being nil and archival materials few and faulty, the archaeological record is little better. Field-work has been sparse in a huge area where cultural differences appear to have been small (although perhaps no less significant therefore) and where much more detailed work than usual is required to delineate the meaningful and important differences. At present writing, only two professional archaeologists have made stratigraphic excavations in the area; surface surveys and collections from unstratified burial sites have been made by a few professionals and a handful of nonprofessionals; and there has been considerable looting by many people. More serious, publication has been neglected; with a few exceptions, reports are not complete enough for more than general purposes. I here refer primarily to the major (i.e., Mexican) sector of the area: more professional and usable work (as well as more looting) has been done in the related regions north of the Rio Grande. Even there, however, controlled excavations have not been numerous, and some of the resulting publications are not suitable for the refined cultural analysis required by the nature of the aboriginal remains and the cultures they represent.

CULTURE AND CULTURE-SEQUENCE
IN COAHUILA

This article will be developed from an archaeological base in the state of Coahuila,

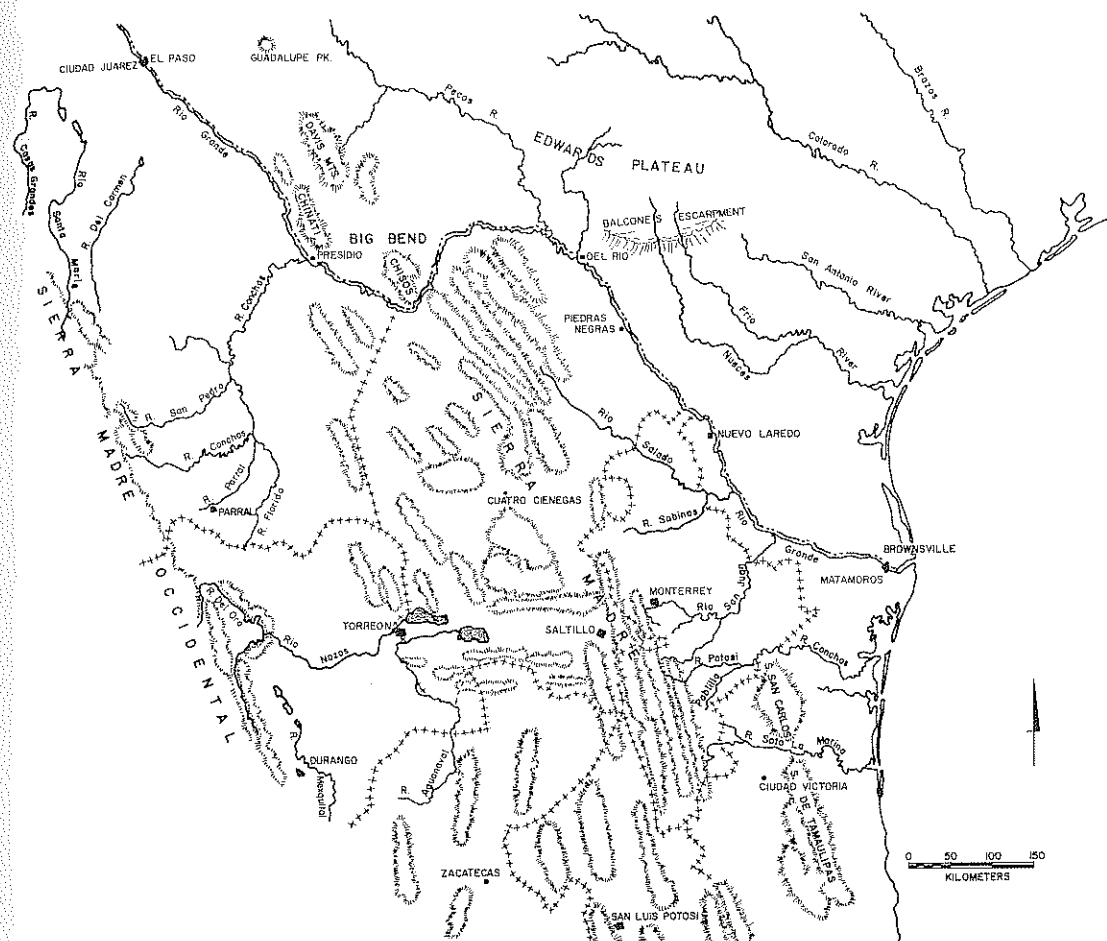


FIG. 1.—NORTHEASTERN MEXICO AND ADJACENT TEXAS (mountain masses representational).

Mexico, because (1) I know the material here better than elsewhere; (2) there is more material in stratigraphic placement than for any other sector of the northeastern frontier; (3) there seem to be cultural relationships between Coahuila and virtually all the other sectors of the frontier; and (4) the material has been studied in sufficient detail to provide information on what may be called "microvariations," through which small cultural and chronological differences may be defined and compared with some expectation of significant results. Because all variations and their meanings cannot be discussed here I shall have to make many statements for which documen-

tation is unpublished. A similar restriction affects the making of detailed concordances between the archaeological and the ethnohistorical data; therefore, the pertinent ethnohistorical sources are listed in the references, and the archaeological traits for which reasonably acceptable ethnohistorical counterparts exist are starred in the text.

From the earliest times of which we have knowledge to the latest there was a cultural continuum in Coahuila, belonging to what has been called the Desert culture (Jennings, 1956, pp. 70-72; W. W. Taylor, 1956, pp. 129-220). Many classes and types of artifacts are the same from bottom to top in the stratigraphic sequence. Variations

occur and relative frequencies change, but without doubt it is a single cultural tradition throughout its approximately 10,000 years. Within this continuum, however, we can distinguish three complexes. These are not to be thought of as "cultures" or separable entities in any partitive, ethnic sense but merely chronologically separable parts of the total inventory. In brief there was a single "culture" which lasted from bottom to top in our stratified deposits: at the beginning of this range were certain artifact types which later disappeared, and, toward the end, a new series of types were incorporated into the total inventory. These changes, early and late, may have been induced by outside influences or have been endogenetic, but the important fact is that they occurred within a single cultural tradition.

In addition to these three complexes found in stratigraphic context, three others have been recognized but have yielded very little comparative, and even less stratigraphic, information.

Cienegas Complex

The Cienegas complex is known from three sites. Two have been excavated stratigraphically—Frightful Cave (CM-68) and Fat Burro Cave (CM-24); the third site (CM-65) had been vandalized and produced only spoil-pile materials. All three are in canyons opening into the Cuatro Cienegas Basin in central Coahuila (fig. 1). The complex consists of a congeries of traits which formed a small part of the total cultural corpus characteristic of the earliest human occupation of which we have knowledge in Coahuila.

Figure 2 illustrates examples of some types included in this complex: *wads of human hair*,* tucked beneath boulders and cobbles of fall-rock on the bottom of Frightful Cave below the earliest cultural deposits, hair cut at regular intervals of about one month; *rattlesnake rattles*, either cut or pulled off and the growing matrix carefully

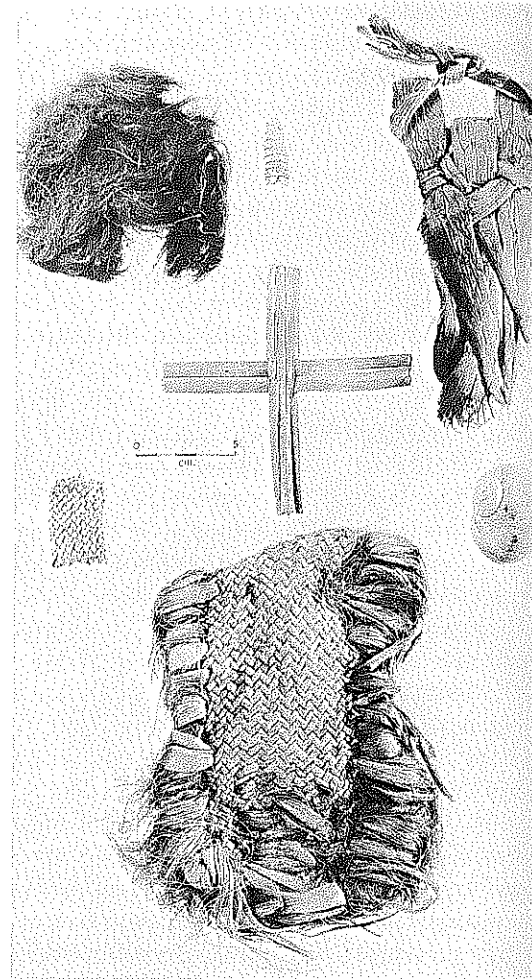


FIG. 2—CIENEGAS COMPLEX ARTIFACTS. Left to right and top to bottom: wad of human hair, rattlesnake rattle, agave scuffer-sandal, fiber cross, narrow plaited band, shell of *Humboldtiana montezuma* Pilsbry, twill-pad sandal. Frightful Cave and CM-65. (Photo, Smithsonian Institution.)

removed; *agave scuffer-sandals*, some from the bottom level of Frightful Cave gave a radiocarbon date of 6125 ± 450 B.C. (Crane and Griffin, 1958b, p. 1120); *narrow plaited bands*; *shells of Humboldtiana montezuma* Pilsbry; *twill-pad sandals*, some from the bottom level of Frightful Cave gave a radiocarbon date of 5345 ± 400 B.C. (Crane, 1956, p. 669). It is possible that certain types not shown may also pertain to this complex:

round self-pointed dart foreshafts (fig. 10), choppers of limestone (fig. 7), spatulate bone awls (fig. 25), agave needles (fig. 23), scored sotol (?) bases or "buttons," the use of elk,* antelope,* coatimundi, bison,* and bear (including grizzly).

By the time the cultural refuse in Frightful Cave had reached a height of 50 cm. above the sterile cave floor, these artifacts were no longer being manufactured, although a few examples, evidently "brought up" in the deposits from their original locations, were found at higher levels. Other artifacts, not of the Cienegas complex but from the bottom level, produced radiocarbon dates of 6915 ± 350 and 6068 ± 350 B.C. (Crane, 1956, p. 669). However, artifacts from the middle level, 50–100 cm. above the cave floor in Frightful Cave, yielded radiocarbon dates of 7585 ± 550 and 7345 ± 400 B.C. (Crane and Griffin, 1958a, p. 1104), i.e., earlier than artifacts from the bottom level. In view of the nature of the cave deposits and the isolated and out-of-order character of these two dates, it is probable that the objects had been "brought up" from an earlier level and that they indicate dates for the bottom level rather than the middle and, thus, for both the Cienegas and Coahuila complexes, i.e., for the cultural matrix in Coahuila at its earliest presently known date. From the general run of these dates, it seems that the types of the Cienegas complex were abandoned sometime between 5000 and 4000 B.C.

Coahuila Complex

The Coahuila complex was the major cultural matrix in central and northern Coahuila from the earliest times to the latest known stratified deposit. It forms the greater portion of the cultural corpus of which, however, the other recognized complexes were also parts. It is known in sites extending from the Rio Grande to the northern edges of the Laguna District and from the front ranges of the Sierra Madre Oriental on the east to the Coahuila-Chihuahua

border on the west. Four of these sites have been stratigraphically excavated: Frightful Cave, Fat Burro Cave, Nopal Shelter (CM-28), and CM-37 which was unrewarding and soon abandoned. The remaining are mortuary sites without stratigraphy or sites in which only unrecorded excavations were conducted or surface collections made. The earliest known dates range between 7600 and 7300 B.C.; the latest radiocarbon date is A.D. 185 ± 250 from the top level of Frightful Cave (Crane and Griffin, 1958b, p. 1120). The latest cross-cultural, comparative date is in the 12th century, based on the finding of sherds of El Paso Brown pottery on the surface of several sites which produced surface finds of Coahuila complex materials. From archival sources, however, it seems very probable that the Coahuila complex endured until the arrival of the Spaniards (de León, 1909; Beals, 1932; Martínez del Río, 1954; W. W. Taylor, 1956, p. 231).

The Coahuila complex was not static. Its forms underwent variation, even though the classes and types of artifacts remained notably constant. These microvariations in time create a picture of cultural change which has both depth and breadth. Partly responsible for this was an environmental change, a gradual desiccation affecting both the natural habitat and its human occupants (Gilmore, 1947, p. 163, L. Johnson, 1960, p. 170). It bore upon aboriginal population particularly by way of changing its cultural ecology and making subsistence less secure. The result seems to have been a loss of cultural integration and stability and a consequent increase in group nomadism and typological variation, together with a decline in craftsmanship. It also had the effect of shifting the balance of subsistence from animal to plant foods, of increasing the use of fibrous desert plants at the expense of woody plants, and possibly of increasing ceremonialism concerned with the dead. Toward the very end, it brought increasing cultural contacts with neighboring peoples

and an influx of material imports or foreign ideas, or both.

Throughout the temporal span of the Coahuila complex, the people, pursuing a nomadic, hunting-and-gathering way of life,* occupied caves and shelters, but it is evident that the utilization of such sites was occasional and that most of the living was carried on in the open.* An exception to this is the lower level of Frightful Cave, where floors prepared by the use of water suggest a more permanently and formally occupied habitation. Generally, however, when they did take shelter, the people seemed to choose particular sites which were used over and over again, whereas they made little or no use of others which today seem equally attractive. The preferred locations were near the mouths of canyons or within relatively easy access of the pediment slopes and the alluvial fans (locally called "monte") and the margins of the playa basins, i.e., places where plant and animal resources were the most accessible in variety.* This exercise of choice implies very little population pressure, and this in turn implies a deterrent to population growth.

Although the Spaniards were horrified at the food of the aborigines, it seems hardly possible that scarcity was the cause of the small population; for people accustomed to eat what the north Mexican desert offers, there is really no scarcity of food (W. W. Taylor and González Rul, 1960). There is considerable abundance of a localized and seasonal sort* whose exploitation required only mobility and free access to large tracts of land. The ethnocentric reactions of the Spanish were directed against the quality and kind of native food; they do not mention that the people were starving or that they worked very hard to obtain what they did eat. De León (1909, p. 40) says that they were improvident and concerned only with the day's food, not that of the morrow. To the Europeans the diet seemed inadequate more from custom than from any real

scarcity of resources. What, then, kept the population low and the people occupying only a relatively few of the available sites?

I suggest two answers to this question or, more exactly, a single subsistence dilemma with two points working somewhat at cross purposes: (1) the extremely low nutritive value of the principal dietary resource, the wild plant foods which required a tremendous amount of far-ranging in order to provide a bare subsistence, and (2) water, whose scarcity and localization put restrictive, i.e., just the opposite, pressures on the aborigines. Even in the more humid, early days, Coahuila was an arid to semiarid desert. The few running streams made water scarce and stringently localized. People could gather food and hunt almost anywhere, but had to return to a known and dependable supply of water. Furthermore, "dependability" would mean being able to count on finding the water available. This in turn would mean either fighting to maintain the availability or establishing some sort of social and/or political control. Since the availability of so vital a resource could hardly have been subject, on a day-in-day-out basis, to the vagaries and fortunes of fighting, it seems most probable that there would have developed an accepted and somehow controlled territoriality based on recognized rights to water, much like the territoriality based on hunting rights in other parts of the world. The seasonal character of the major plant resources and the need for abundant supply because of their low quality would have made these territories large and mobility within them of prime importance. This mobility, wide-ranging but tied to water supply, I have called "tethered nomadism" (W. W. Taylor, 1964). The radius of these waterbound wanderings would have been dependent on the types and amount of the seasonal food resources and on the amount and distribution of water resources. Since water in north-eastern Mexico is almost entirely confined to the mountain masses (except the Rio

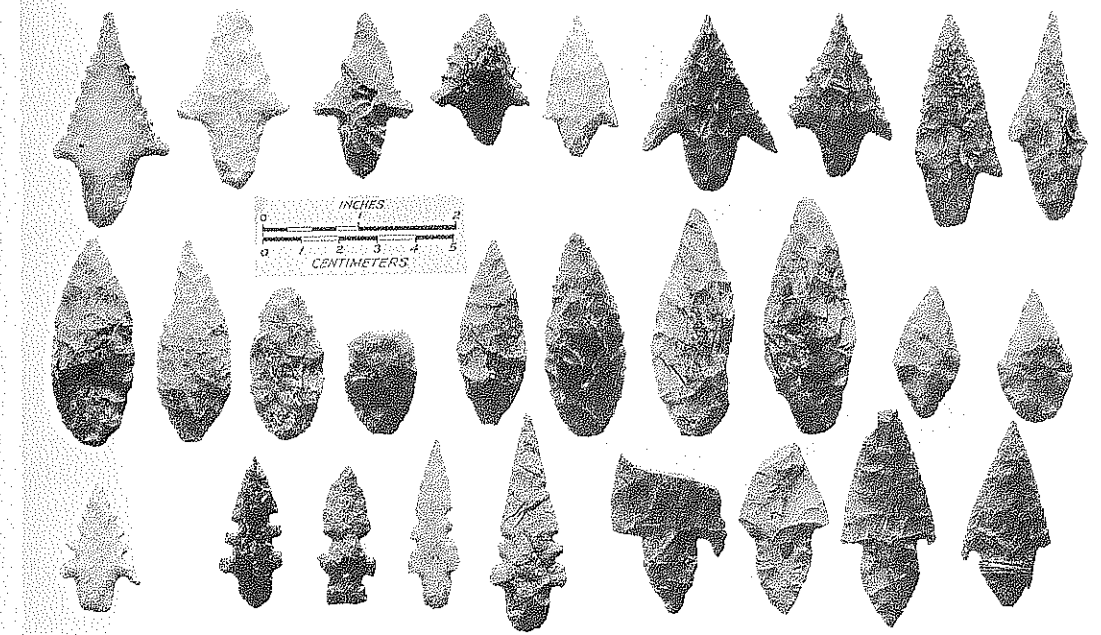


FIG. 3—EARLY AND MIDDLE COAHUILA COMPLEX POINTS. Top row: Jora points from Fat Burro and Frightful caves. Middle row: Fragua points from Fat Burro Cave and Nopal Shelter. Bottom row left: Duran points from Fat Burro Cave, CM-31, and CM-32. Bottom row right: Gobernadora points from Nopal Shelter, Frightful Cave, and CM-32. (Photo, Wyatt Davis, for Smithsonian Institution.)

Grande and its few perennial tributaries), groups of people were probably localized around these features, occupying the canyon mouths and the skirting monte within easy reach of water and from which they could more easily exploit the surrounding lands: mountain, canyon, monte, and flat. Experience in modern Coahuila shows that this pattern, with only minor modifications due to more elaborate technology, prevails today: people live in settlements around the fringes of the mountain blocks and know their own mountain and its immediate surroundings but are relatively ignorant and often fearful of other mountains and other people clustered around them.

Evidence from the Coahuila complex suggests that there were changes in the intensity of nomadism during the course of its existence. At first, during and just after the Cienegas complex, the culture was relatively sedentary and localized, and it

showed internal evidence of being well integrated and stable. This was probably the classic period of "tethered nomadism." By the middle level of Frightful Cave, possibly owing to pressures caused by increasing desiccation, cultural integration and stability appear to have weakened. This is inferred from a noticeably growing heterogeneity of cultural (artifactual) form combined with a degeneration of craftsmanship. Increased nomadism is attested by a greater number of occupied sites and an extension of their distribution throughout much of Coahuila. Also some of the lithic types from this middle period point to considerable cultural contact with outside areas. Finally, toward the end of the Coahuila complex, with the appearance of the Jora complex (discussed below), cultural integration seems to have been restored, evidently under the aegis of foreign influence and on a basis of "ranging," rather than "tethered," nomadism.

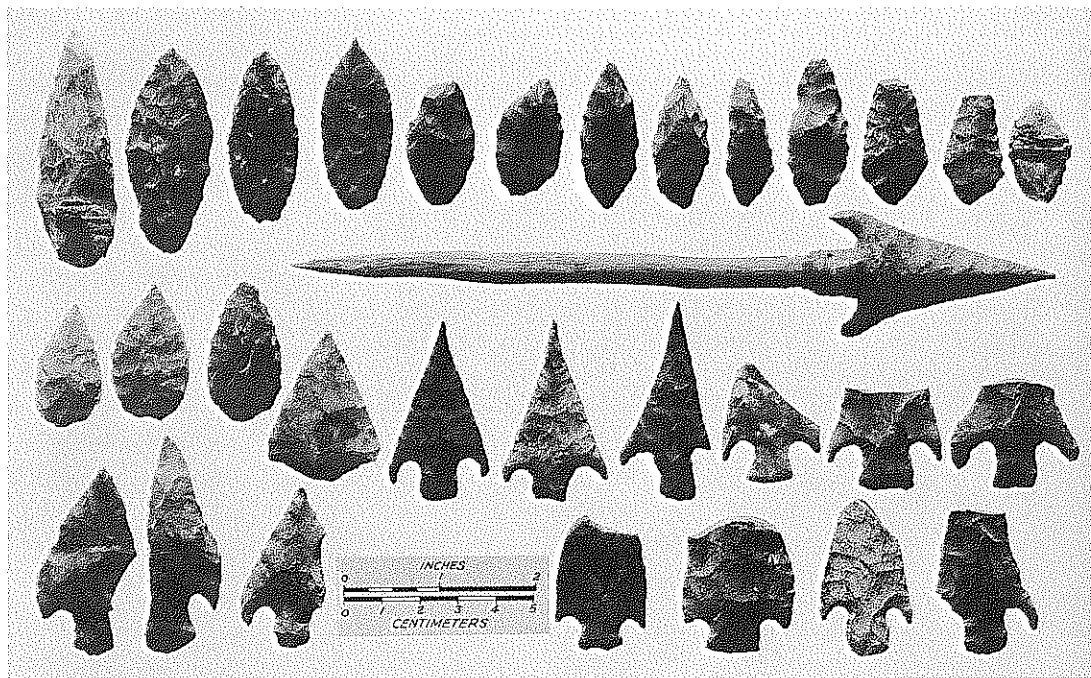


FIG. 4—EARLY AND MIDDLE COAHUILA COMPLEX POINTS. Top row and left three of middle row: Espantosa points from Frightful Cave. Middle row, fourth: unnamed point from Fat Burro Cave. Middle row, others and foreshafted: Socorro points from Fat Burro Cave. Bottom row left: Socorro points from Fat Burro Cave, heavy subtype; two Socorro points. Bottom row right: two unnamed forms. (Photo, Wyatt Davis, for Smithsonian Institution.)

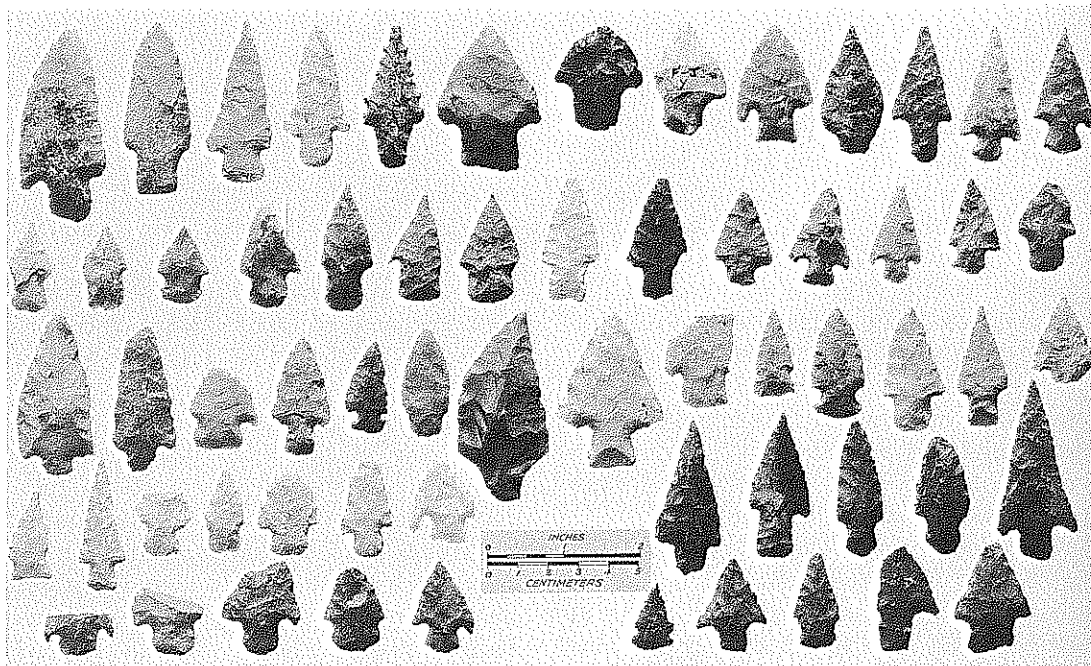


FIG. 5—MIDDLE AND LATE COAHUILA COMPLEX POINTS. From Fat Burro Cave, Nopal Shelter, Frightful Cave, CM-31, CM-32. (Photo, Wyatt Davis, for Smithsonian Institution.)

In the Coahuila complex there are three major industries based on material of manufacture: wood, plant fiber, and stone. Those based on bone, antler, hair, fur, hide, feathers, shell, minerals, seeds, and other plant products are very minor. Even the stone industry is a minor one in the early stages, although it becomes important in later ones. The ratio of stone to wood to fiber throughout Frightful Cave is approximately 1:6:26, these figures representing the average numbers of artifacts of the respective materials per cubic meter of deposit excavated within the site. In other sites, because of conditions of preservation, special circumstances of occupation, and probably later date, stonework is very much more abundant in relation to the other categories of material. All things considered, Frightful Cave gives the most realistic picture of aboriginal culture in ancient Coahuila.

STONE. Viewed as a whole, stonework appears to increase in quantity but to become less formalized and less internally integrated as time goes on. In the blade industry at the beginning, a few bifacial types, formalized and consistent, were quantitatively dominant, and bifacially chipped artifacts of a single form had many uses. In later times, artifacts of a single form and evidently of a single use were made by both bifacial and unifacial techniques. In other words, an original mode of form-technique with multiple use gave way to a mode of form-use with multiple technique. Further, at any given point of time the numerically dominant types of blades were consistently produced by pressure flaking; the same types, when coming in or going out of fashion, were made by both pressure and percussion, the latter often being the more common. Gradually, unifacial blades in considerable typological diversity began to compete with the bifacial. Later, the numbers of unifacial types decreased although the total frequency was maintained; and still later, the proportional representation of unifacial and bifacial types began to de-

crease, whereas unretouched flakes with no typological consistency at all showed a marked proportional and absolute increase. These facts, it seems to me, indicate a definite tendency toward progressive formalization (already accomplished in bifacial blades at the moment of our first knowledge) and then a deformalization through time within the bifacial-unifacial blade categories. This implies a definite fluctuation in the typological conceptualization of the artisan himself. The blade industry in general shows a loss of craftsmanship, although possibly not utility, in the progression from bifacial to unifacial to utilized flake artifacts.

Points also show a definite formality at the start and a progressive deformalization evidenced by a proliferation of forms, virtually untypable, in the later epochs (with an ultimate re-formalization at a much later date in Jora complex times as described below). The earliest types are oval, "laurel leaf" in shape (Espantosa and Fragua points, figs. 3 and 4; *affinis* Lerma, Refugio, Abasolo per Suhm and Krieger, 1954). Overlapping these, but with somewhat later chronological position, is a single type having a large, contracting stem, frequently serrated, and with strong barbs (Jora point, fig. 3). Following these, and again overlapping somewhat, come a heterogeneous lot of notched and stemmed points, only a very few of which are enough alike to warrant being placed in types (figs. 3, 4, 5). Quantitatively, stone points are notably scarce in all stratigraphic levels, but the absolute frequency increases in time. One more thing about the points: at first, shape is consistent, while length, width, and therefore weight vary greatly; later, shape loses its consistency, and the other attributes tend toward stability, although they still have considerable range. These observations suggest that the early points, undoubtedly used for tipping atlatl darts, could be of varying sizes, although in the beginning certain shapes were adhered

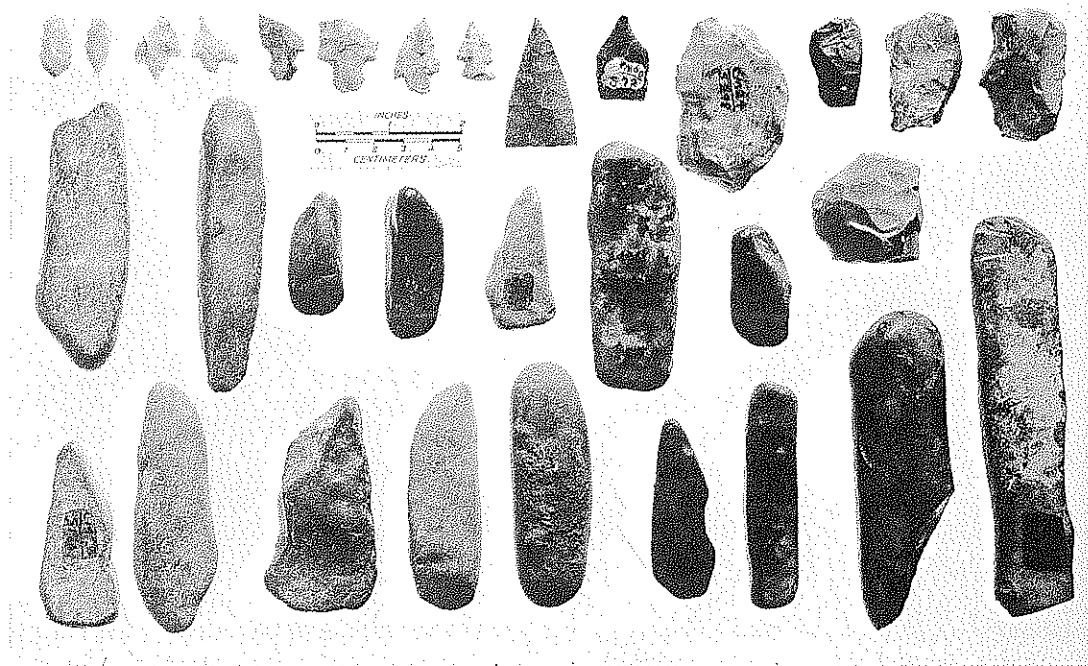


FIG. 6—COAHUILA AND JORA COMPLEX ARTIFACTS. Top row: flake points from Nopal Shelter and Frightful Cave; thinned base triangular point from Nopal Shelter (Taylor Thinned base ?); drill from Frightful Cave; four core "finger choppers" from Fat Burro Cave and Nopal Shelter. Middle row right: core scraper from Fat Burro Cave. Middle and bottom rows: limestone bars from Fat Burro Cave, Nopal Shelter, and Frightful Cave. (Photo, Wyatt Davis, for Smithsonian Institution.)

to with regularity. Later, possibly when the atlatl was giving way to the bow, points had to conform to a more rigid standard of weight and therefore size, but shape, for some reason, was no longer of as much concern to the artisans, possibly because, as seen in other analyses, the culture in general was becoming less formalized and probably less integrated, craftsmanship was breaking down, and distracting outside influences were on the increase.

Metates of the slab variety have a wide distribution, although they are not numerous. This suggests either that pounding and milling were not primary food-processing techniques or that these large and bulky artifacts were "brought up" in the deposits and represent cumulative use over long spans of time. Our present impression is that both these factors pertain, although

other evidence shows that food preparation on metates was relatively less in the early epochs of the Coahuila complex. Some metates are pitted, indicating pounding of hard objects such as bones* or the walnuts* whose remains are found in quantity in the early levels. Basin metates have not been found in excavated sites and seem to have a northerly and westerly distribution in Coahuila; we therefore believe them relatively late. Striations on metates indicate that manos were used in a longitudinal, straight movement. The manos are mostly arroyo cobbles of limestone; basalt and other stones are obviously foreign and generally late in the Cuatro Cienegas Basin sites. The majority of manos are pitted. There are no true rocker manos, although all manos are of the small, "one-hand" kind.

Cores are not common even in sites, such

as Fat Burro Cave and Nopal Shelter, which were certainly chipping centers. This scarcity may be due to the fact that cores ended their careers as fire-rock, abundant everywhere. Only one artifact that could possibly have been used as a drill has been found in our work; it was in the bottom level of Frightful Cave (fig. 6). Although we did not specifically search for burins (Epstein's finding of such implements in Texas [1960b] postdated our laboratory work), none were identified, and my feeling is that none were present. Only seven choppers were found, an inexplicably small number in view of the quantities of wood and fibrous plants processed by the aborigines; they are of limestone and very haphazardly made (fig. 7). Of the six stone ornaments discovered (fig. 8), one from Fat Burro Cave is of selenite; the others are of the ever-present, ever-used, dull, local limestone. One was painted and another was lustrous black. Although unusual materials were known and a desire for color is in (slight) evidence, the aborigines apparently did not have much interest in ornament, color (the arroyos are full of brightly colored stones), shininess (calcite and selenite were known and are common in the local rocks), or even in decoration. The few ornaments found are early. Bedrock mortars occur at 11 sites, mostly in the northern and western sectors of the state. Only two were in sheltered sites; obviously proximity to habitations of any sort, sheltered or otherwise, was not a prerequisite. Nearness to the habitat of plant foods, i.e., the monte, seems to have been a more impelling factor. Mortar holes are most commonly found in groups, and in many instances many or all of the holes are of equal utility, i.e., their depths are not unusably great, nor are they nascent. We therefore infer that many of the holes were used at the same time and that, if groups of women could gather to process food-stuffs in mortar holes away from habitation sites, either they did so under armed guard

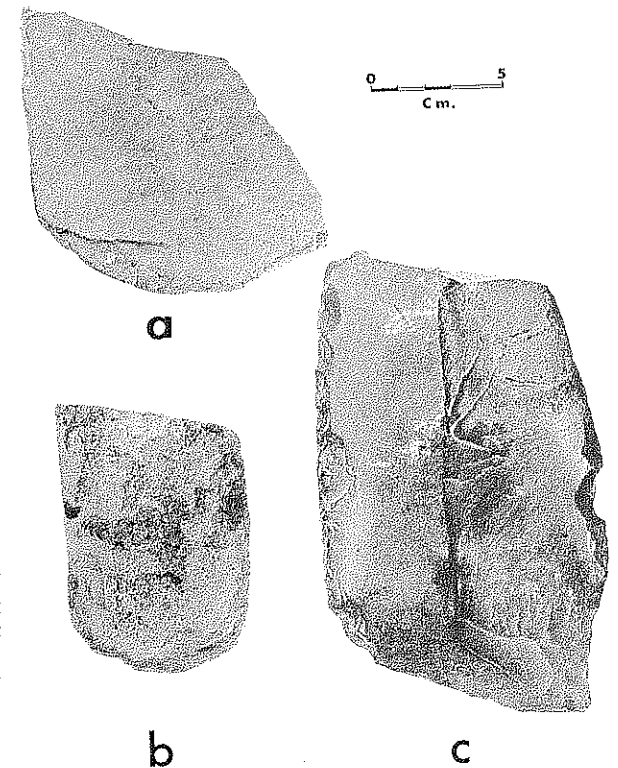


FIG. 7—LIMESTONE CHOPPERS. Coahuila complex. From Fat Burro and Frightful Caves. (Photo, Smithsonian Institution.)

or the threat of attack was nil. We believe the latter to have been the case. Again the conjunctives point to some sort of social and/or political control, as with water supply. Rock grooves, the so-called "sharpening grooves" found in the Trans-Pecos of Texas (V. J. Smith, 1938, p. 222), have been found in 12 sites (fig. 9). What they represent cannot be argued at this time, but they certainly were not used for sharpening any implement so far found in Coahuila; in fact, their nature would seem to preclude them from sharpening anything. Rock midden circles, the so-called "mescaleros," have been found at seven locations in central and northern Coahuila in contexts of the Coahuila complex; this distribution does not take into account the 16 found along the Rio Grande in the area of the Diablo

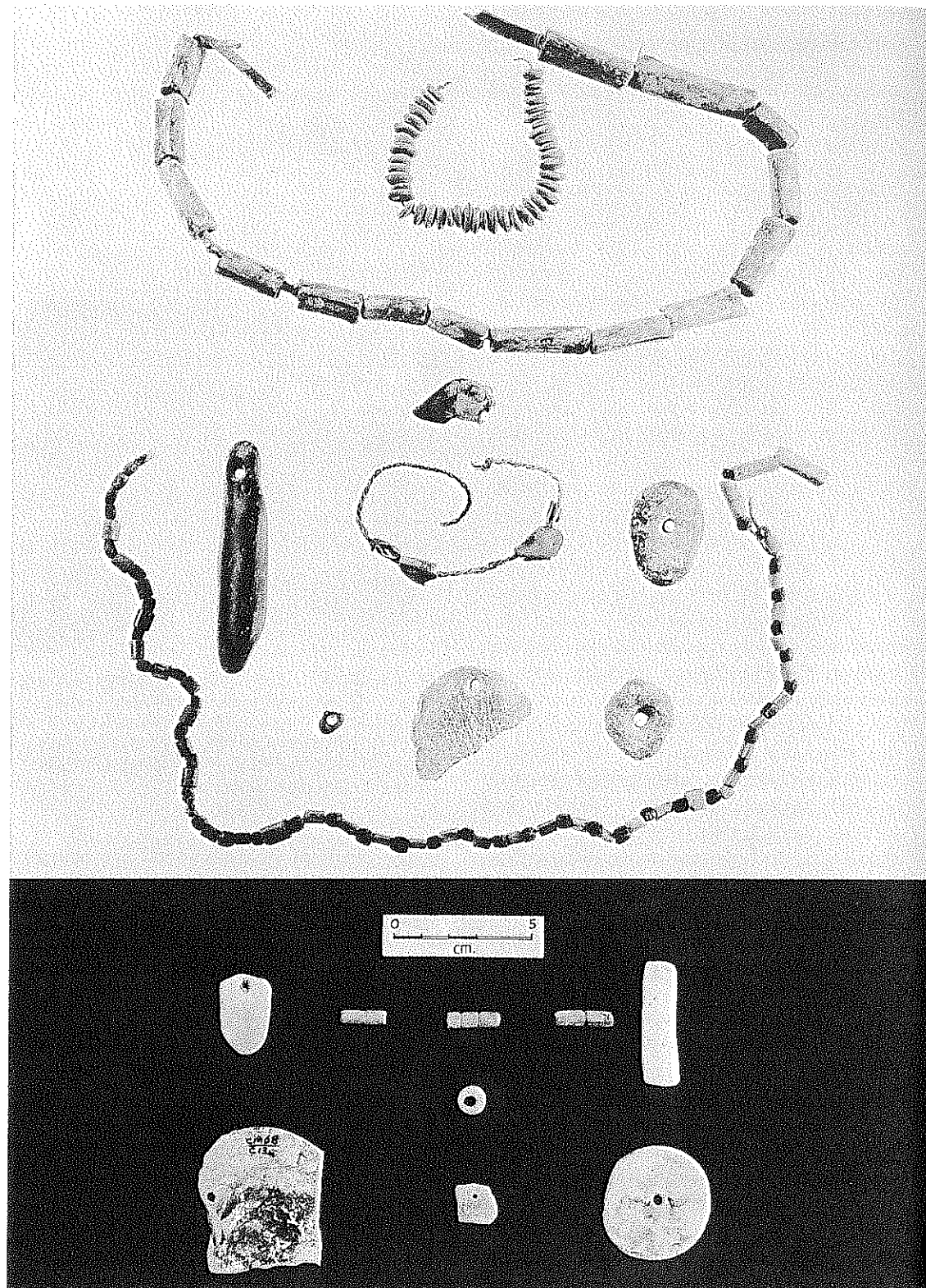


FIG. 8—ORNAMENTS. Coahuila, Jora, and Mayran complexes. Top to bottom, left to right: *Acacia* seed beads on fiber cord,* *Canis latrans* bone beads, *Antilocapra americana* dewclaw on thong, black limestone pendant, *Odocoileus* or *Antilocapra* hoof-covers on fiber cord, limestone button or pendant painted red, *Spondylus princeps* bead, engraved limestone pendant, limestone button or bead, bone and seed beads, *Lampsilis siliquioidea* pendant, three strangle-groove bone beads of *Lepus californicus*, tubular bead of serpulid marine worm (often erroneously called *Vermetus* in the literature), bone bead, *Lampsilis siliquioidea* pendant, selenite button or pendant, dense bone button. (Photo, Smithsonian Institution.)

ARCHAIC CULTURES: NORTHEASTERN FRONTIERS

Reservoir (W. W. Taylor and González Rul, 1960). Their distribution is definitely northern (and also western in central Coahuila), geographically associated with the Rio Grande and its approaches. Limestone bars were found in Frightful Cave, Fat Burro Cave, and in Nopal Shelter, three of the four stratigraphically excavated sites (fig. 6). Whatever their aboriginal use, they were not natural in the sites but had been brought there by human agency. They bear no paint but many show signs of use, mostly rubbing but some pounding. Discolorations suggest grease, soot, blood, hematite, and/or some combination of these. Although three of the five in Frightful Cave came from the bottom level (the other two were top level), evidence from the other sites indicates them to be relatively late. Similar objects have been found along the Rio Grande in northern Coahuila and Texas (Taylor and González Rul, 1960; Epstein, 1960a, pp. 99-100; Archaeological Salvage Program, 1958, pp. 22-23).

Wood. The Coahuila complex was primarily concerned with wood and fiber and only secondarily with stone and other materials. Much of the stonework seems to have served for processing wood and fiber. In the bottom level of Frightful Cave, for example, only two notched dart foreshafts (for stone points) were found, as against seven self-pointed wooden foreshafts. Also in the bottom level, there were 725 fiber artifacts, 273 wood, and only 46 stone.

Notched foreshafts increased from bottom to top, conjoining with the increase in stone projectile points to strengthen the context (fig. 10). The seven self-pointed wood foreshafts from the bottom level are long, heavy, and round, often with some of the bark still adhering; the other four (from the top level) are faceted to a quadrangular section, are much shorter and lighter, and retain no bark (fig. 10). The one bunt foreshaft, very large, was found in the bottom level (fig. 10). Shaft wrenches are late in Frightful

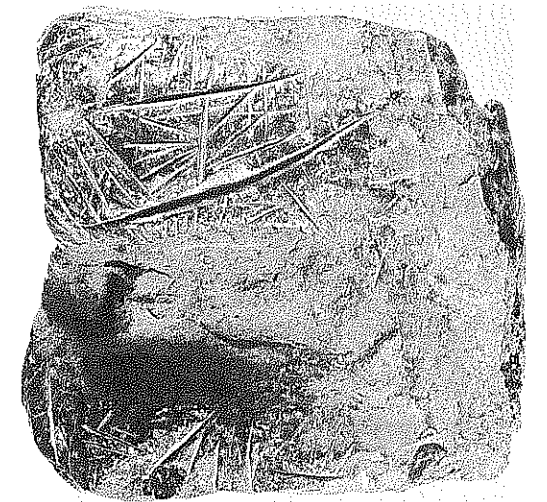


FIG. 9—POLISHED LIMESTONE BOULDER WITH GROOVES. Often called "sharpening grooves." From CM-70a. (Photo, Smithsonian Institution.)

Cave, the only place where they have been found (fig. 11).

Atlats are of two types: (1) the mixed or Mexican variety with both groove and engaging-hook is late in time; (2) the "male" type, represented by three examples, was fashioned from a hardwood limb with a natural fork formed into a large and powerful hook. These were found one in each of the three levels in Frightful Cave (fig. 12). Grooved clubs* were present in quantity and were of the three-groove, "southern" variety (Heizer, 1942); they ranged from bottom to top and were quite surely associated with bows as well as with atlats (Kellar, 1955, p. 307). Only six digging sticks were found. There were 19 specimens of fire tongs for use in handling the hot rocks for stone-boiling (fig. 11). The netting reel (fig. 11) is unique in the literature as far as can be ascertained. Two notched sticks, surely musical rasps,* came from the middle and top levels of Frightful Cave. Hearths for fire-drills were scarce, probably because used ones had been



FIG. 10—DART FORESHAFTS. Coahuila complex. Top row: notched and bunt. Bottom four rows: self-pointed—top two rectangular, bottom two round with bark. From Fat Burro and Frightful Caves. (Photo, Smithsonian Institution.)

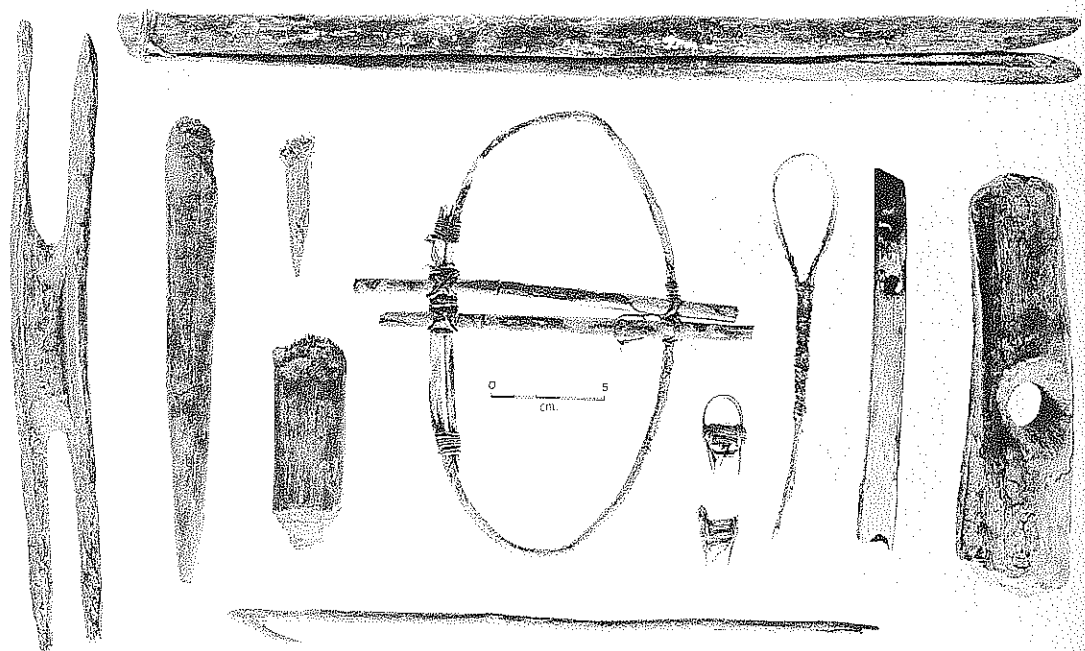


FIG. 11—WOODEN ARTIFACTS. Coahuila, Jora, and Mayran complexes. Top: fire-rock tongs. Middle: netting reel, three pegs, miniature cradle from infant burial probably of Mayran complex in Fat Burro Cave, two withe loops, split-twig loop of Jora complex, fire hearth, shaft wrench. (Photo, Smithsonian Institution.)

thrown into the fire when discarded (fig. 13). Drilling was done in later times with the hearth placed across the body, but in early times with the hearth in line away from the body. Rubbed and scorched sticks show that fire was also made merely by rubbing two sticks together.*

Whether what we call "burial sticks" (fig. 14) belong with the Coahuila complex or with the Jora complex is uncertain; they have been found only in burial sites, lying loose on the surface with other cultural objects for which assignment to one or the other complex is undecided. They range from 420 to 1390 mm. in length and are generally made of the flowering stalk of *Agave lechuguilla* (?) or *Yucca* sp. (?). Their larger ends have been modified as strangle-grooved, eyed, end-flattened, fiber-wrapped, or combinations of these. They pertain unquestionably to the burial complex. Another frequent component of this complex is the stick arc, clearly either the frame of a carrying net* or a cradle. In all excavated sites were quantities of cut sticks, finished and unfinished pegs, and signs of a great amount of wood working (fig. 11).

FIBER. Fiber is by far the most abundant material-of-manufacture in the Coahuila complex. Among the artifacts from Frightful Cave there is over 20 times as much fiber as stone, and over four times as much as wood. These figures pertain to manufactured artifacts only, not to fiber "matrix" items such as quids, grass-lined cache pits, food and manufacturing refuse, all of which were very common in the deposits.

Twisted-fiber cordage (mostly of *Agave** and *Hesperaloe*) is the most abundant fiber artifact. From Frightful Cave were recovered 1193 pieces having a total length of 185.74 m.; there is less, both proportionately and absolutely, in Fat Burro Cave. Z-twist is most common, approximately 10 times S-twist. Three- and four-ply cordage is extremely scarce.

Sandals are the next most numerous fiber

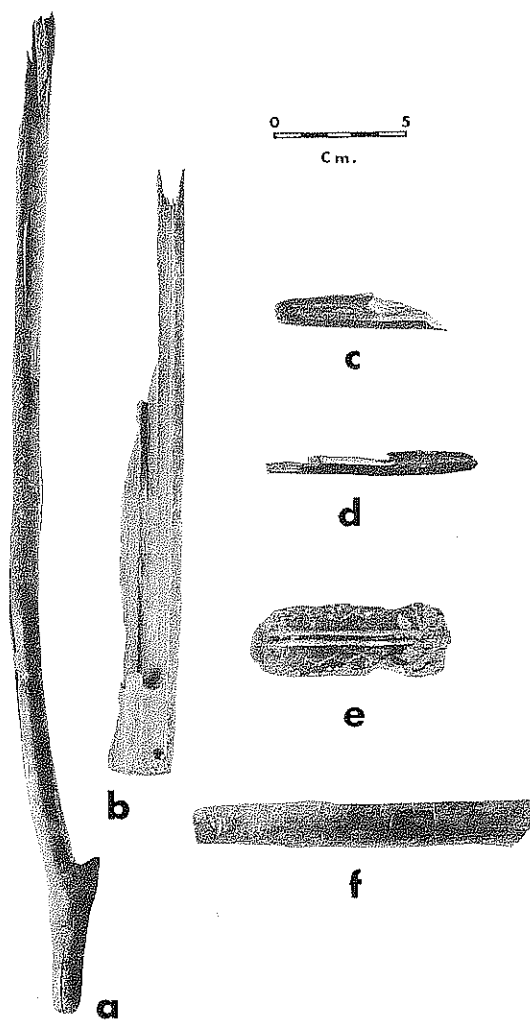


FIG. 12—ATLATLS. Coahuila complex. a, Round-shafted male type, early Coahuila complex. b, c, Two Mexican or "mixed"-type hooks. d, Engraved section of a shaft. e, Proximal end. f, Hook end of a broken but complete Mexican type. From Frightful Cave and CM-73. (Photo, Smithsonian Institution.)

artifact. In Frightful Cave there were 959 of them. The other sites did not produce nearly as many, even allowing for the differences in cubic meters excavated. In Frightful Cave twill-pad sandals (fig. 15) came from the bottom level. They are early in Fat Burro Cave also. Checker-pad sandals (figs. 15, 16) are a bit later, sewed sandals (fig. 16) later still, and braided ones

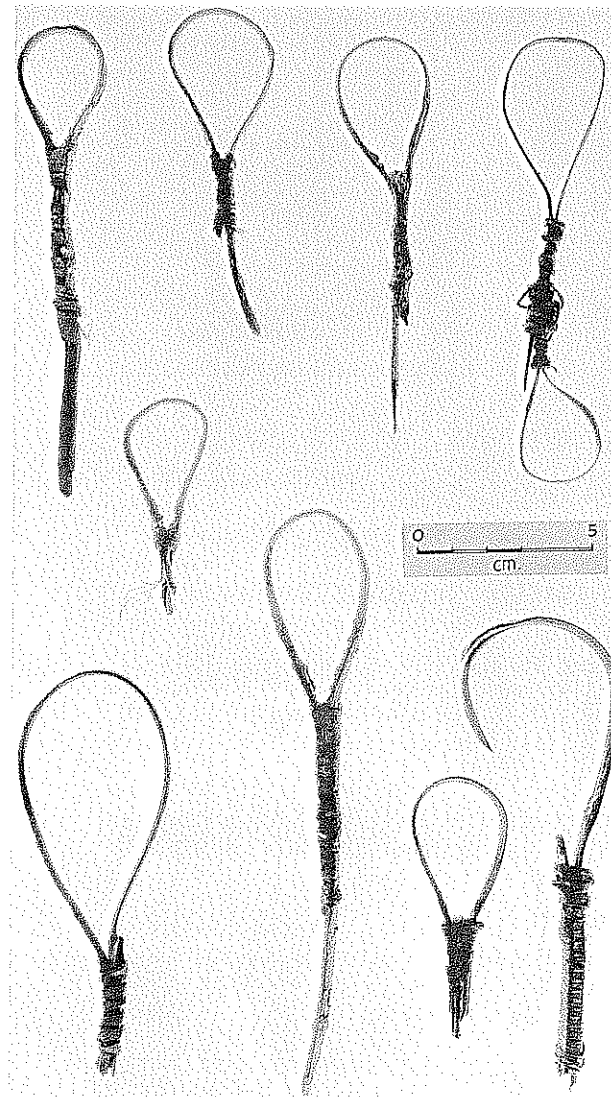


FIG. 13—SPLIT-TWIG LOOPS. Jora complex. From Fat Burro and Frightful caves. (Photo, Smithsonian Institution.)

(fig. 17) are top level. Two-warp plaited sandals are found from bottom to top, but the three-warp variety is top level only. The seven types of sandal ties apparently have significant chronological proveniences but cannot be discussed here.

Coiled basketry appears from bottom to top in both Frightful and Fat Burro caves. Its greatest frequency does not come until the top level of the former and the middle level of the latter (fig. 18). In Frightful

Cave the incidence of coiled basketry, proportional to other fiber categories, increases from bottom to middle to top (less than 10 per cent, around 30 per cent, and just over 60 per cent of the category, respectively); the same percentage sequence holds for five of its attributes: bundle foundation, half-rod foundation, split stitch, and each direction of stitch slant. This consistency is conjoining and supports the validity of the several distributions. Split stitch is present in 85 per cent of all coiled basketry in Frightful Cave; 63 per cent is of half-rod foundation, 31 per cent bundle, 6 per cent whole rod. The proportions in Fat Burro Cave are 76 per cent bundle, 14 per cent half-rod, and 8 per cent whole rod. These data suggest that bundle foundation is a relatively late trait and that whole rod is early. Interlocking stitch is both rare (only five specimens) and definitely early. Counterclockwise stitch on the work surface is superseded by clockwise. Convex work surface is slightly later than that of concave.

In plaited matting, both the twill and the checker techniques are present from bottom



FIG. 14—BURIAL STICKS. Complex uncertain, probably Coahuila. Only larger end illustrated to show varieties of working. From CM-59d, CM-64, CM-73. (Photo, Smithsonian Institution.)

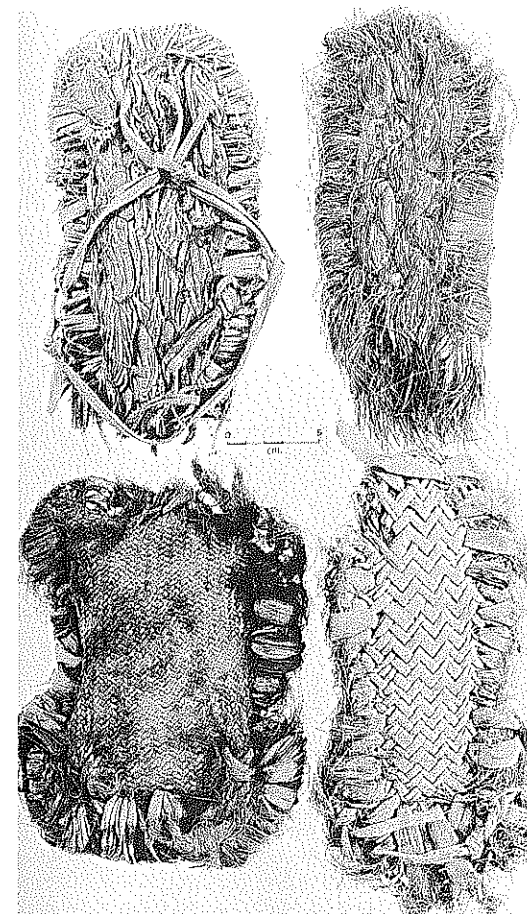


FIG. 15—SANDALS. Top: Coahuila complex two-warp, left mostly *Hesperaloe funifera* in "crude" state, right *Agave lechuguilla* decorticated. Bottom: Cienegas complex, twill pad of two subtypes. From Frightful and Fat Burro caves and CM-65. (Photo, Smithsonian Institution.)

to top, but checker equals twill only in the top level of Frightful Cave (fig. 19). Knotless netting ("coil without foundation") is present throughout the stratigraphic column (fig. 20). Knotted netting is late in Frightful Cave. Twined textiles appear early and in major proportion, seem to diminish, and then come on again late in the sequence (figs. 21, 22). Virtually identical percentage progressions are seen in hard twining (mats, bags, baskets, fringes) and in soft

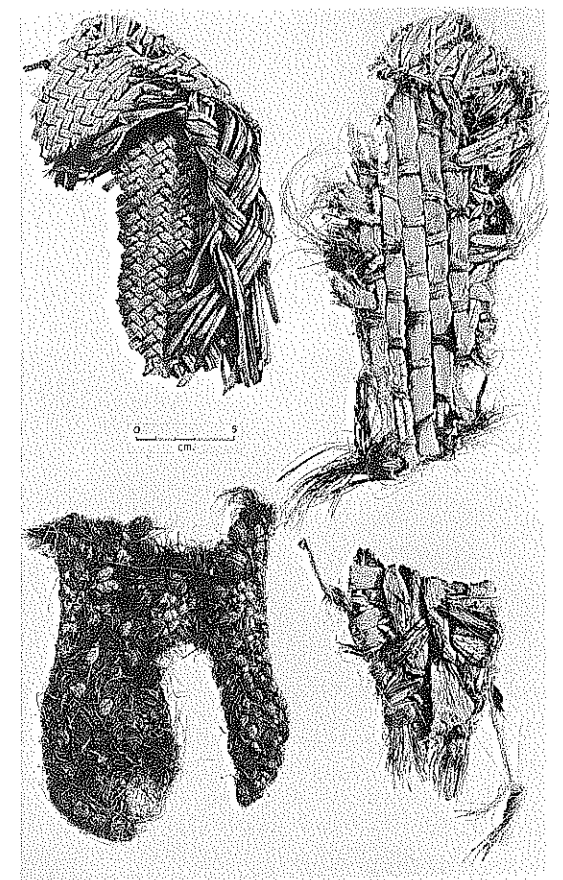


FIG. 16—PLAITED BAG SELVAGE AND SANDALS. Top left: selvage. Top right: checker-pad sandal, Cienegas complex. Bottom left: sewed sandal, late Coahuila and Mayran complexes. Bottom right: only fish-tail sandal in collection, Coahuila or Jora complex. From Fat Burro and Frightful caves. (Photo, Smithsonian Institution.)

twining (aprons, robes). In both hard and soft twining most of the early specimens have their weft elements slanting from up-right to down-left, whereas in later times the reverse slant is more common. Rosettes (fig. 23), radiocarbon dated at 1275 ± 350 B.C. (Crane and Griffin, 1958b, p. 1120), appear, from bottom to top in Frightful Cave, as 2 per cent, 24 per cent, 63 per cent; they have been found in only one other site, CM-37, in Cave Canyon near

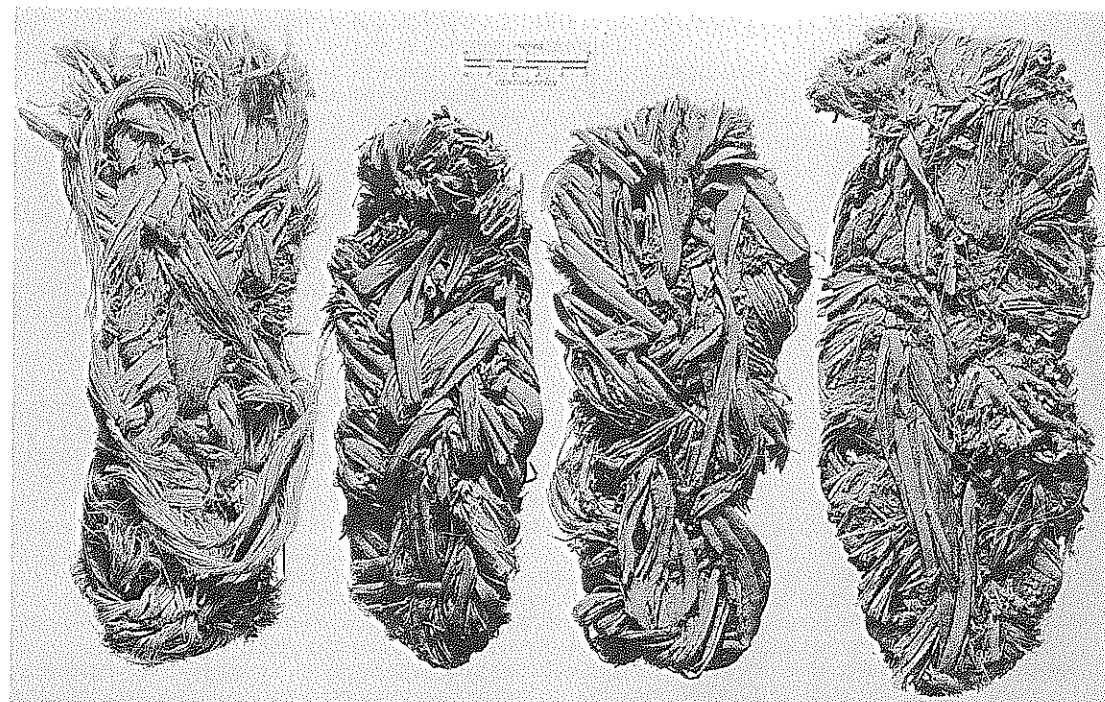


FIG. 17—BRAIDED SANDALS. Late Coahuila, Jora, or Mayran complex. From Fat Burro and Frightful caves. (Photo, Wyatt Davis, for Smithsonian Institution.)

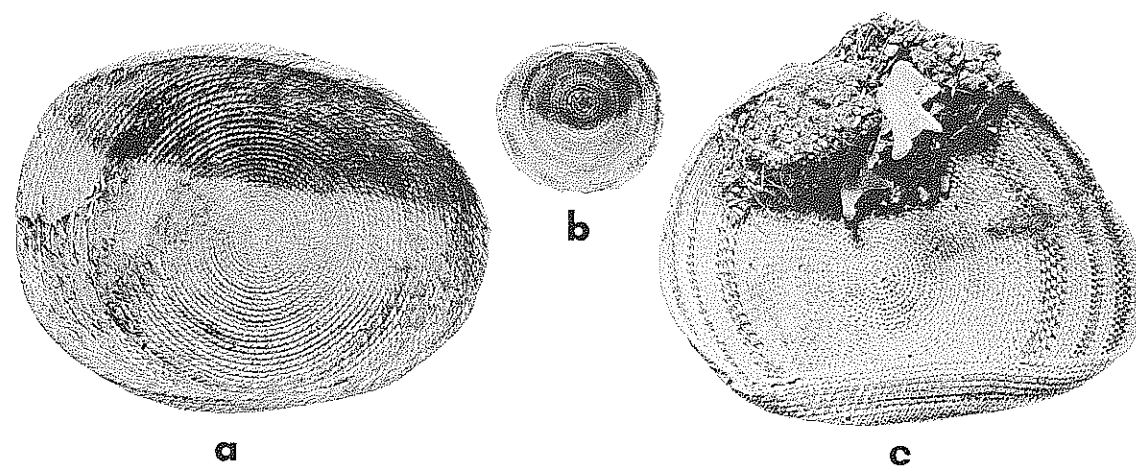


FIG. 18—COILED BASKETRY. Mayran complex, from CM-79. Diameter of smallest: 10 cm; diameter of top right (with human mandible): ca. 29 cm. (Photo, Smithsonian Institution.)

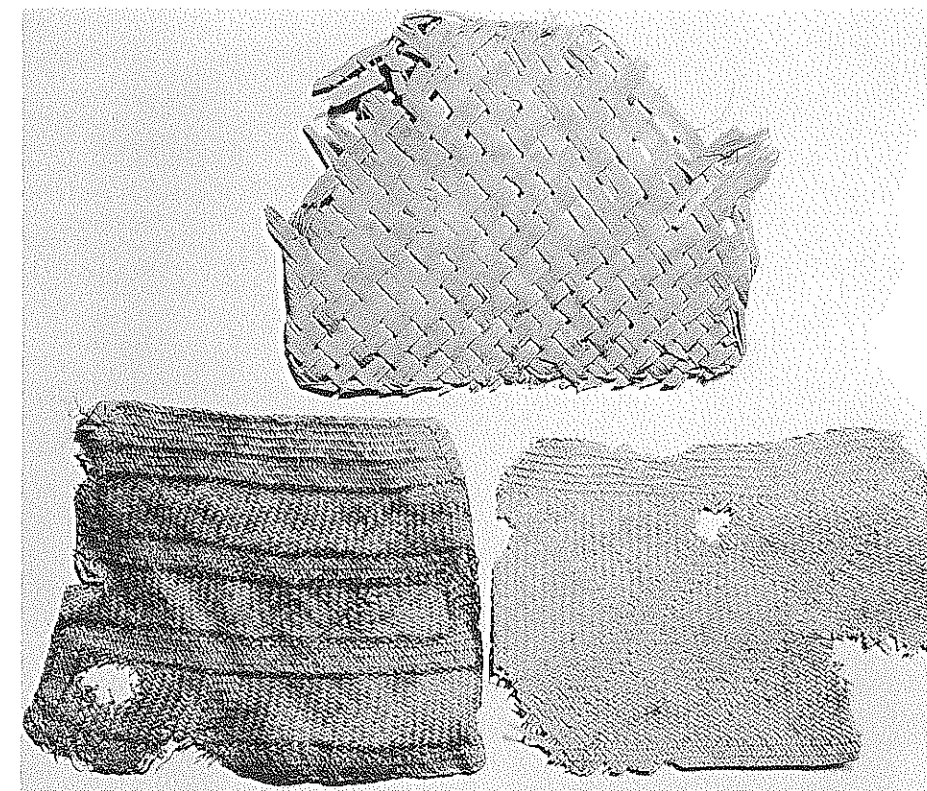


FIG. 19—PLAITED MATTING. Top: checker, Coahuila complex, from Frightful Cave, 43 by 33 cm. Bottom left: twill with red paint outlining woven design, Mayran complex, from infant burial in Fat Burro Cave. Bottom right: twill with woven design, Mayran complex, from CM-74. (Photo, Smithsonian Institution.)

Fat Burro Cave and Nopal Shelter. Not counting those on sandals, there were 1761 knots of all kinds recovered. Of these, 91 per cent are comprised of square and over-hand knots; the rest included granny, figure-eight, slip, sheet bend, half-hitch, and one double-fold knot. In Frightful Cave more than 95 per cent of all knots were found in the front, in the fire-rock area, evidently left there during food preparation. The sheet bends were distributed middle and back, the half-hitches front and middle. Vertically, knots follow quite closely the general trend of all fiber artifacts from the site; but sheet bends are concentrated in the middle level, half-hitches in the top level. A series of scari-

fiers* (fig. 24) is significant in view of the fact that the archives refer to tattooing and bloodletting, for both of which tasks these artifacts would be admirably suited.

BONE. Bone awls and antler artifacts (fig. 25) have a "normal" vertical distribution in Frightful Cave, i.e., similar to that of the quantitatively major categories. The awls are definitely located front and back, i.e., in the fire-rock and waste areas. Not a single ulna awl has been found in Coahuila. Reduced cannon-bone awls are later, whereas those not modified are early. No bone beads were found in Frightful Cave, indicating that the considerable numbers found in other sites, particularly burial sites, are to be considered late and possibly as custom-

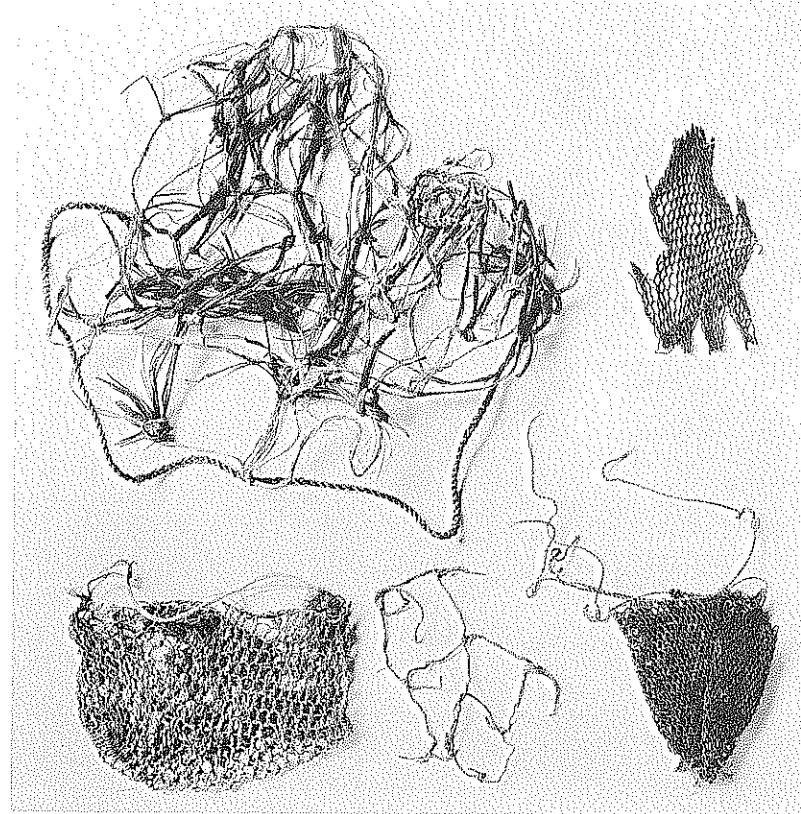


FIG. 20—NETTING. Top left: crude fiber knotted (sheet bends) bag, Coahuila complex, from Frightful Cave. Top right: knotless, Mayran complex, from CM-79. Bottom left: knotless bag, 8 cm. deep, 12 cm. long. Bottom center: knotted (double half-hitch or clove hitch), Coahuila complex, from Frightful Cave. Bottom right: knotless bag, Mayran complex, from CM-79. (Photo, Smithsonian Institution.)

ary grave goods. Antler was used for both flakers and flaking anvils. One set of deer antlers* was found in a burial cave with two deer mandibles crossed and tied into the branches; from the accompanying material this specimen is thought to belong to the latter part of the Coahuila complex or to the Jora complex (fig. 26). The archives speak of the use of deer skulls in ritual (García Torres, 1856, p. 83). The concentration of miscellaneous bone remnants, especially deer, is early and diminishes in the upper levels of Frightful Cave. Notable is the proportionally great number of mandibles of many species of animal;

the quantity would indicate that this is a cultural phenomenon possibly connected with the practice of breaking up, hence destroying, marrow and other large bones that could be powdered and eaten.* Rodent mandibles were bound for reinforcement and used probably as gravers.

OTHER MATERIALS. Shell* and minerals are extremely scarce, although a considerable amount of hematite* was found in Fat Burro Cave. Fur and processed hide* were quite common in Frightful and Fat Burro caves; fur cord was made and evidently woven into textiles.* Featherwork* was present but rare. Human feces were ap-

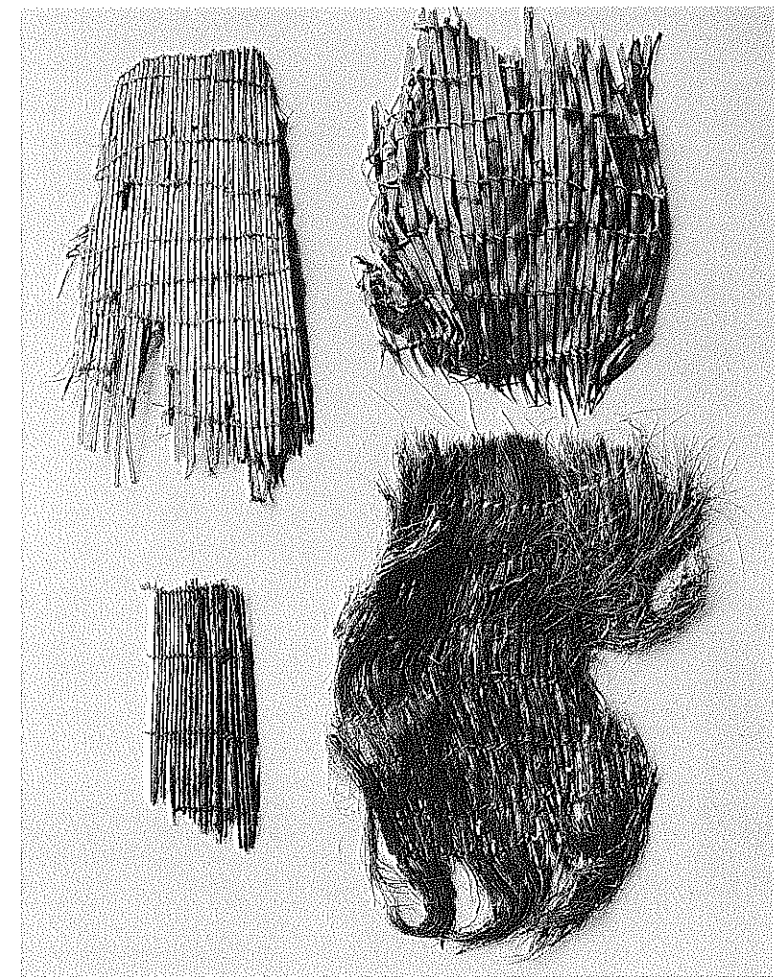


FIG. 21—TWINED MATS AND CONTAINERS. Coahuila complex, from Frightful Cave. Top row left: 34.5 cm. long. (Photo, Smithsonian Institution.)

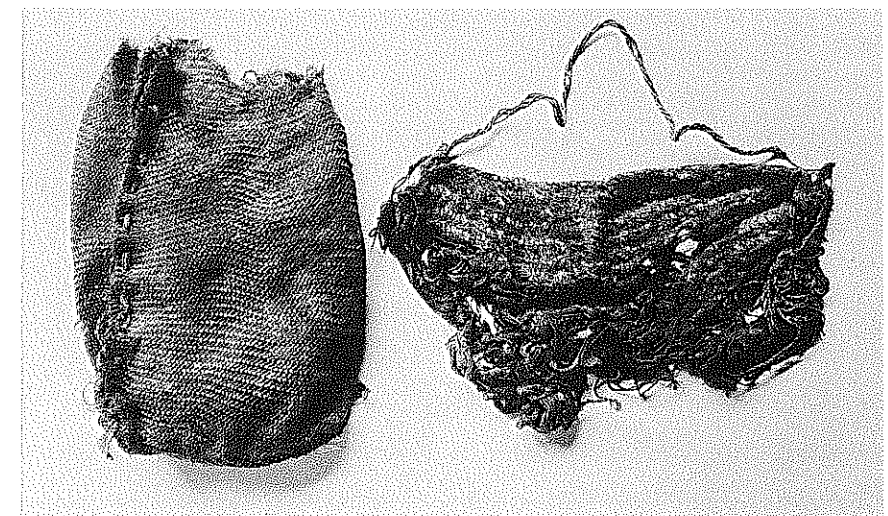


FIG. 22—BAG AND APRON. Coahuila complex, from Frightful Cave. Left: twill plaited bag of two fabrics sewed together* with thong, 34 cm. deep. Right: twined apron of soft fiber with thong (?) waist belt. (Photo, Smithsonian Institution.)

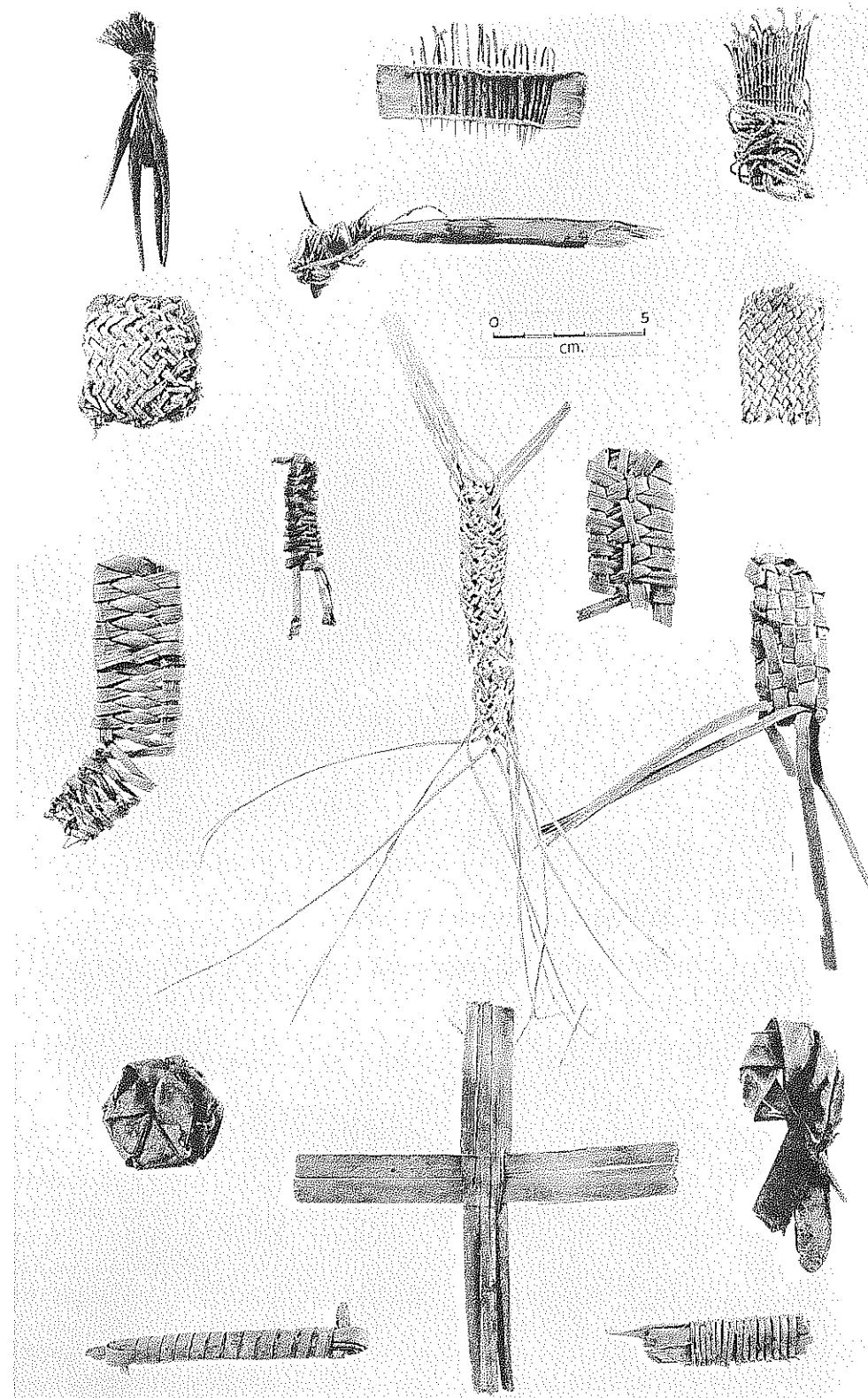


FIG. 23—FIBER ARTIFACTS. Coahuila complex, except three. All from Frightful Cave. Top row: *Agave* needles, Cienegas complex; two scarifiers. Second row: scarifier of single *A. lechuguilla* leaf. Third row: small plaited pad or pillow; narrow plaited band, Cienegas complex. Fourth row: plaited "ears." Fifth row: completed rosette; fiber cross, Cienegas complex; unfinished rosette. Bottom row: self-wrapped strips. (Photo, Smithsonian Institution.)

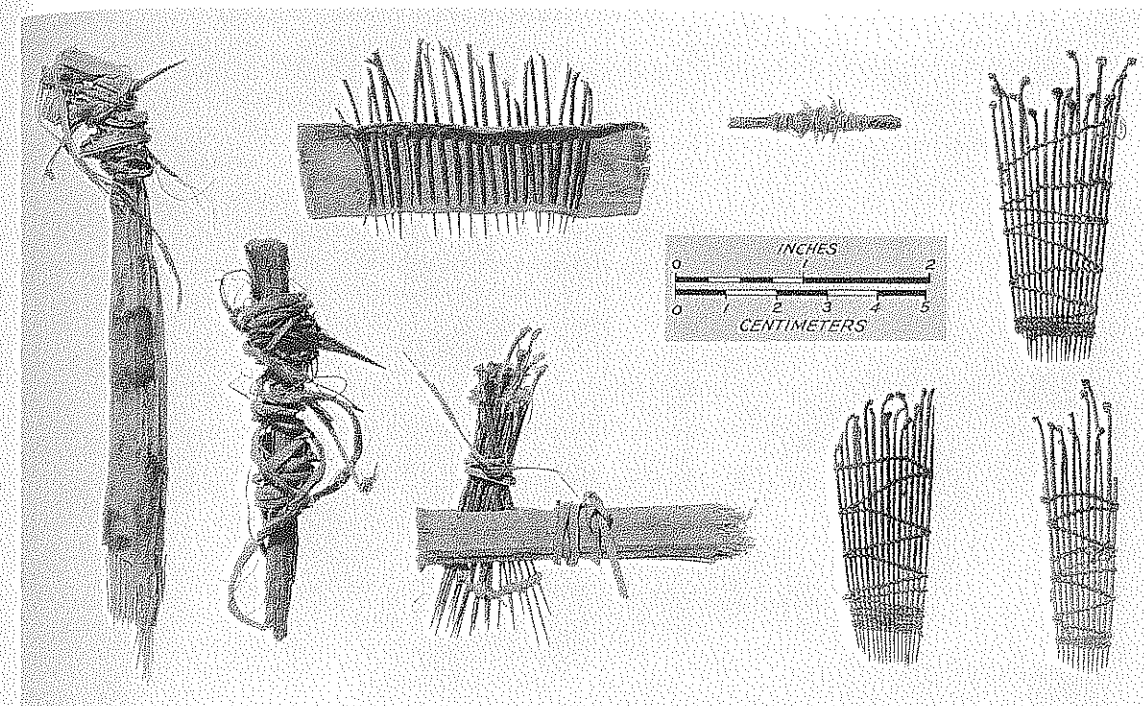


FIG. 24—SCARIFIERS. All Coahuila complex and all from Frightful Cave, except small one with rodent teeth second from right in top row, which is possibly Jora complex and from Fat Burro Cave. Two left: a single *Agave lechuguilla* leaf turned on itself and bound; others are of *Opuntia* spines lineally arranged in various ways, including twined weave in right three. (Photo, Wyatt Davis, for Smithsonian Institution.)

pally common in all sites where preservation permitted; natural functions seem to have been performed without regard for modesty, sanitation, or probably even the normal routine within an occupied habitation site.* Quids of fiber,* the sucked-out remnants of roasted succulents used for food, were everywhere and in great quantity, especially frequent in the fire-rock areas (W. W. Taylor, 1948, p. 172). Quantities of the narcotic mescal bean, *Sophora secundiflora*, were found in Frightful Cave; this shrub grows in the canyon today but the presence of the beans in the cave surely represents purposeful collecting by humans (Campbell, 1958). Serpulid marine worm tubes (*Protula superba*?) fashioned into beads were found in CM-64, a burial site; these have also been found in the Hueco Caves (Cosgrove, 1947, p. 152), caves in northern Chihuahua (Sayles, 1936b, pl. 16), the Mogollon and Harris villages (Haury,

1936b, pl. 19, fig. 30), the colonial period at Snaketown (Gladwin *et al.*, 1937, pl. 113), upper Rio Fuerte in southern Chihuahua (Zingg, 1940, p. 25), San Cayetano and Babocomari villages of southern Arizona (DiPeso, 1951, p. 190; 1956, p. 100), at Santa Ana near Zape, Durango (Mason, personal communication). In the published reports, they have generally been identified as *Vermetus*, an erroneous identification which obscures the fact that the presently known locus of these animals is the Pacific Ocean, specifically off the Santa Barbara coast of southern California.

Jora Complex

The Jora complex consists of a number of traits which were part of the late cultural corpus in Coahuila. It is not a separate ethnic entity but rather a congeries of chronologically significant traits within a cultural continuum, the body of which we have



FIG. 25—BONE ARTIFACTS. Left: plastron of *Kinosternon sonoriense*, edges smoothed, from Fat Burro Cave; awl of earlier (?) type; awl of later (?) type; two spatulate awls, Cienegas complex (?); antler flaker; antler flaking anvil from Fat Burro Cave. Lower left: rodent jaw bound as graver (?), from Fat Burro Cave. All Coahuila complex and Frightful Cave unless otherwise stated. (Photo, Smithsonian Institution.)

been calling the Coahuila complex. Possibly some of these traits are of foreign origin, specifically from the region of La Junta de los Rios (Conchos-Rio Grande confluence).

The traits so far recognized are: small projectile points obviously for use on arrows* (fig. 27), small self-pointed wooden foreshafts also for arrows,* split-twig loops (fig. 11), small snub-nosed flake scrapers sometimes notched, use of predominantly light-colored chert for chipped implements, use of basalt and sandstone for manos, basin metates and rocker manos, bedrock mortar holes, rock midden manos, bedrock mortar holes, petroglyphs, ceramics. Only the first seven traits have been found in stratigraphic position; the rest are surface finds placed (sometimes uncertainly) in the complex on the basis of seriation and association.

The types of small points are identical, individually and collectively, with points already known from Texas, particularly from the central Texas and Bravo Valley aspects but also from certain east and south Texas foci such as Henrietta, Frankston, Galveston Bay, and Rockport (Jelks, Davis, and Sturgis, 1960; Suhm and Krieger, 1954). Split-twig loops have been found in the Trans-Pecos, and at least one specimen was on exhibit at the Sul Ross State College Museum in Alpine, Texas, in 1940. The center of distribution of the small notched end scrapers seems to be farther south, possibly in the state of San Luis Potosi (Beatriz Braniff, personal communication); Aveleyra found several in the Laguna District (Aveleyra *et al.*, 1956, p. 75, figs. 7, 9), but the Coahuila specimens seem to be the feather

edge of the range (W. W. Taylor and González Rul, 1960). Basin metates, basalt manos, bedrock mortar holes, rock midden circles all seem to be more common in the northern and western sectors of Coahuila, i.e., near Rio Grande and Trans-Pecos of Texas, particularly the Conchos-Rio Grande confluence. In this region there are exposures of the types of extrusive rocks used to make these manos. Ceramics are scarce in Coahuila and all are surface material, including the two sherds found in the Candelaria burial cave (Bernal in Aveleyra *et al.*, 1956, p. 205). Pottery is of several kinds, only two of which are known at the present time to have relationships elsewhere: El Paso Brown typical of the Jornada Branch (Lehmer, 1948, p. 94), this particular variety dating from the 12th century (Mera, letter of April 8, 1942), and another rather generic, undated type, both unpainted and painted red, which has been identified as relating to the brown-ware sites of southern New Mexico (Mera, *ibid.*; Jennings and Neumann, 1940, p. 6). There is no way at present to associate this pottery definitely with any other cultural material from Coahuila since it has not been found *in situ*; however, its distribution and the nature of the sites and associated surface material point to its connection with the Jora complex, and possibly with the late Coahuila complex.

The Jora complex, to judge from the very little we know about it, seems to represent a reconstitution and reintegration of culture in (northern) Coahuila. This time, however, outside influences are definitely indicated, unlike the Cienegas complex, for the origin of whose obvious stability and integration we have no signs at all.

Mayran Complex

This material comprises that found by Aveleyra in Candelaria and Paila caves (Aveleyra *et al.*, 1956) and that of the Palmer "mummies" and much of the material recovered by the nonprofessionals



FIG. 26—ANTLERS. *Odocoileus* antlers with mandibles tied across; probably late Coahuila complex, CM-74. (Photo, Smithsonian Institution.)

working out of Torreon and Saltillo (Studley, 1884; McVaugh, 1956, p. 80, 133 ff.; Barragán, Cárdenas, and Valdés, 1960). An infant burial attributable to the Mayran complex was found in Fat Burro Cave, and a disturbed burial cave (CM-79) with multiple interments and Mayran grave goods was salvaged in west-central Coahuila. Characteristic of it are: elaborate textiles of netting cloth and loom-woven material including cotton (Barragán, Cárdenas, and Valdés, 1960, fig. 30), large boldly chipped triangular knives which are often hafted* (fig. 28; Aveleyra *et al.*, 1956, pls. 12-16), snub-nosed flake scrapers and small projectile points of Jora complex or Bravo Valley aspect affiliations (Aveleyra *et al.*, 1956, pls. 4, 7, 9, 11; Barragán, Cárdenas, and Valdés, 1960, fig. 18), a variety of notched and stemmed medium-sized points of Coahuila complex affinities (Aveleyra *et al.*, 1956, pls. 1, 2), elaborate bone and shell bead

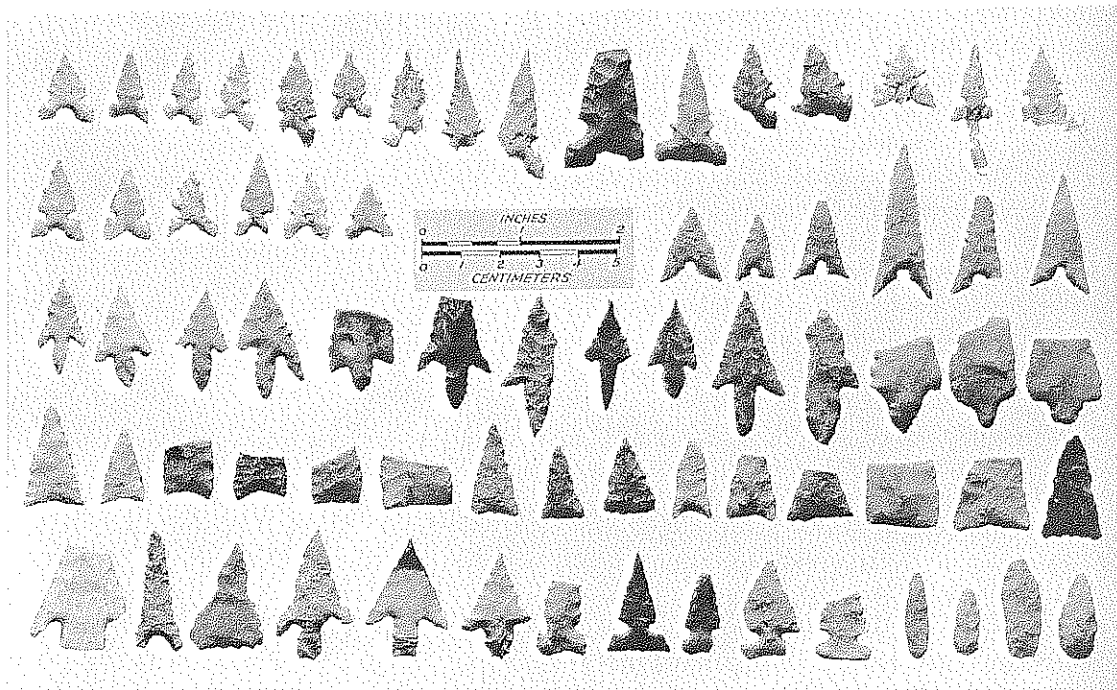


FIG. 27—POINTS OF THE JORA COMPLEX. Top row and second row left: Sierra Madera (Toyah?). Second row right: Cienegas. Third row: Nopal (Perdiz?). Last three third row right: Ojo (Clifton?). Fourth row: El Muerto (Fresno?). Bottom row: various untyped. From Fat Burro Cave, Nopal Shelter, CM-32, and CM-37. (Photo, Wyatt Davis, for Smithsonian Institution.)

"flowers" (*ibid.*, pls. 22-24), bow and arrow, twig-frame net baskets (*ibid.*, p. 153, pl. 46; Barragán, Cárdenas, and Valdés, 1960, fig. 25), and an extensive mortuary complex involving bundle burial of whole cadavers (Barragán, Cárdenas, and Valdés, 1960, fig. 29) with accompanying grave goods enveloped in textiles and entombed in large numbers probably over a considerable time in limestone caves (often solution cracks), not habitation or even habitable locations. Since there are, in addition to the projectile points, a number of accompanying traits which belong to the Coahuila complex, it is possible that this mortuary complex has some antiquity, although it certainly endured quite late, possibly even as late as the end of the 16th or beginning of the 17th centuries, if we can credit the identity of the two potsherds found in Can-

delaria Cave and those from a mission site in the Laguna District (Bernal in Avelleyra *et al.*, 1956, p. 205). A number of peyote buttons* strung on a cord were found as part of the Mayran complex grave goods in the burial cave, CM-79.

Coastal Plain Complex

No excavation has been done in the coastal plain province of Coahuila. Material attributed to this complex comes entirely from surface collecting (Müllerried, 1934). Other surface collections which appear to be typologically like those found on the coastal plain (fig. 29; W. W. Taylor, personal notes; Dudley Jackson, personal notes; Kirk Bryan, personal notes) have been made in the interior regions of Coahuila. On the other hand, these collections are quite similar to some from the Laguna Dis-

trict which include Mayran complex types as well. One thing appears certain: that this large, boldly chipped stonework, especially the large triangular blades with obvious affinities to Tortugas points of the Falcon reservoir and Tamaulipas areas, is not characteristic of the Coahuila complex. Whether this material represents a cultural or a chronological difference or both is a problem at the present time. My present hunch is that the Coastal Plain complex material is generically related to the Coahuila complex and contemporaneous with it during the last pre-Spanish and earliest conquest periods. The archives tell us that Indians traveled back and forth throughout northern Mexico from Zacatecas and San Luis Potosi into Texas and from the shores of the Gulf of Mexico to the mines of Chihuahua. Kelley (1955) has shown the effects of such movement in one particular instance, and it is not difficult to envisage a broad diffusion of material objects, and possibly also of ideas, from one end of the area to another. Thus the appearance in the west of these artifacts of more eastern affiliation is not as unexpected as might be supposed.

COAHUILA SKELETAL MATERIAL. Skeletal material is not common in Coahuila, and, with the exception of that found with Mayran complex artifacts, its cultural associations are very uncertain. On the sterile gravels at the bottom of Frightful Cave, but in a pit excavated from approximately 50 cm. above, was the burial of an aged female dressed in loincloth and G-string, wrapped in a robe of twined vegetal fiber, and wearing a pair of two-warp sandals; she was lying flexed on a bed of rocks and twigs; her face had been covered by prickly-pear pads, and a plaited mat had been tucked around and under her head. This was an early or early middle Coahuila complex burial, one of only three known to have been found *in situ* in occupation sites in Coahuila. Serological tests on desiccated tissue (W. W. Taylor and Boyd, 1943; Boyd, 1959) showed that this person had

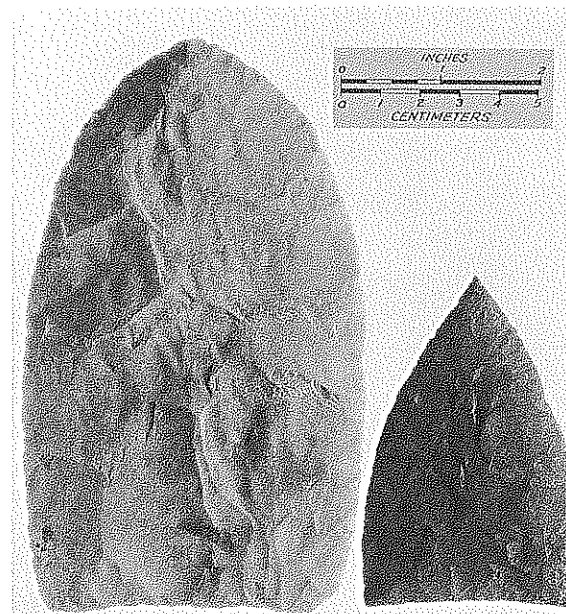


FIG. 28—STONE ARTIFACTS OF THE MAYRAN COMPLEX. From CM-88 and CM-89, Palmer Coll., Peabody Museum, Harvard University. (Photo, Wyatt Davis, for Smithsonian Institution.)

blood type B; with one example from site CM-59b in Coahuila (W. W. Taylor and Boyd, 1943), one from the Big Bend of Texas (Boyd and Boyd, 1937; Boyd, 1950, p. 249), and examples from the Paracas burials of coastal Peru (Boyd and Boyd, 1937), this is the only test on pre-European American Indian tissue that has shown blood type B. An infant burial in Fat Burro Cave had with it a miniature cradle, two nock ends of arrows and two arrow shafts, a string of cervid hoof-covers, a ball of cotton cord, a bone-bead necklace, traces of typical Mayran complex netting, a painted mat of twill plaiting, a coiled basket, several leather strips; the whole was wrapped in the tanned hide of what was apparently a mountain lion (*Felis concolor*).

Most burials, however, were placed in small niches or shelters at some distance from habitation sites. Some seem to have

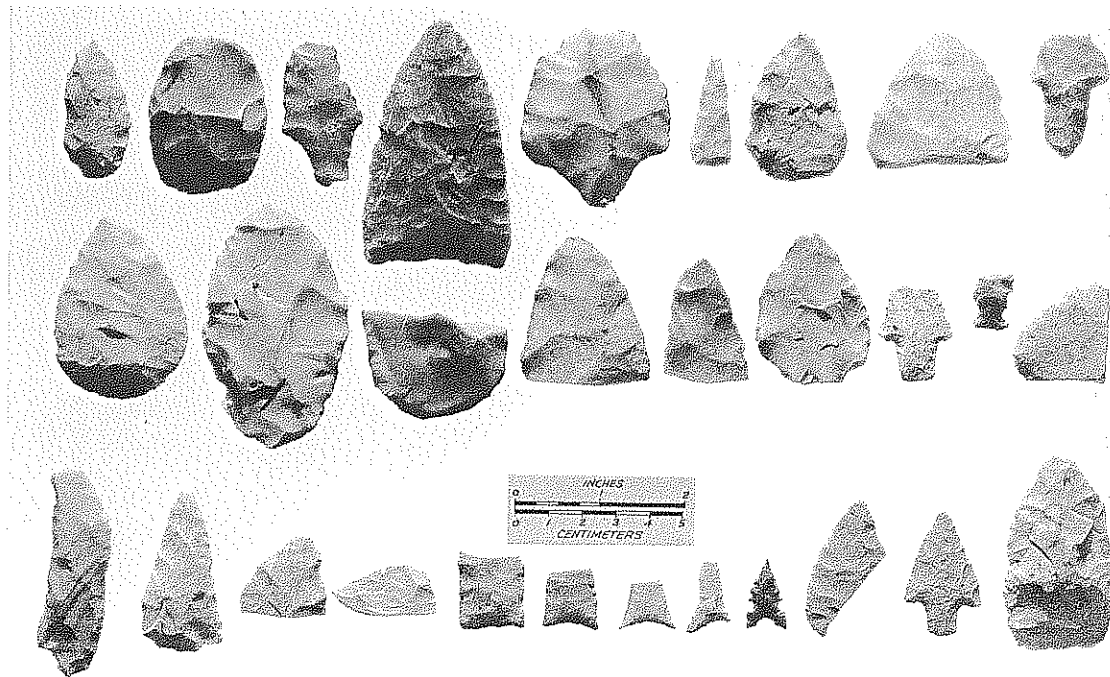


FIG. 29—COASTAL PLAIN, JORA, AND COAHUILA COMPLEX ARTIFACTS. Top two rows: typical surface-collected material from Coastal Plain complex sites in western Coahuila, CM-40, -41b, -49, -54, -50, -58. Bottom row: Jora and Coahuila complex material from central Coahuila, CM-55, CM-62. (Photo, Wyatt Davis, for Smithsonian Institution.)

been secondary bundle burials; many were enveloped in matting and covered with piles of stone. Grave goods were scarce, sometimes absent. Several types of artifacts were found consistently with such burials: burial sticks, cradles and/or net carrying frames, strangle-groove bone beads of jackrabbit bone, strung matting of marsh plants (*Cyperaceae*, *Typha*), plaited matting. In the Laguna District, the type locality for the Mayran complex, burial caves are large and contain many interments, evidently representing long use. The mortuary complex is elaborate, although the burial sticks so characteristic of the northern region have not been found. From this and the rather frequent evidence for the bow and arrow, it appears that these burials and, hence, the Mayran complex are late in Coahuila.

Except for the work of Studley (1884) and Hooton (1930, p. 233 ff.), almost no study has been done on human remains in Coahuila—or in northeast Mexico as a whole. From these scanty data and from the few measurements taken on other Coahuila skeletal materials, it is apparent that the population was dolichocephalic to hyperdolichocephalic (one cranial index of 64), of small stature, with small cranial capacity, orthognathous, leptoprosopic, and mesorhine. They are quite closely comparable to the Texas Coast, the Abilene, and the Trans-Pecos series (Woodbury and Woodbury, 1935, p. 35 ff.), the Arizona and Pecos Basket Maker series (Hooton, 1930, p. 233 ff.), to the Pericu-Lagoa Santa type of Baja California and Brazil respectively (Woodbury and Woodbury, 1935, p. 43), and thus

also to the two "Cochise" skulls from Ventana Cave (Gable, 1950, p. 513).

COAHUILA PARIETAL ART. Pictographs in Coahuila are not uncommon, but their cultural affiliations are obscure. Geometric figures in red and yellow seem to be the earliest; later, black and white are added, and hand prints appear. In the latest group zoomorphic representations include figures of horsemen in European, specifically ecclesiastical, dress. The horses are of the "Plains type"; the paintings probably were made by Indians from Texas, possibly the Comanche or Lipan who raided into Coahuila after 1780. None of the typical "Pecos River" pictographs has been found, with the exception of one series reported from near the Rio Grande (H. C. Taylor, 1948). Petroglyphs are quite common in the Laguna District (Carl Compton, personal communication; W. W. Taylor, personal notes; Barragán, Cárdenas, and Valdés, 1960, figs. 14-16), but only one series has been found in the rest of the state. The former series may be connected with the Mayran complex and the latter with the Jora complex, although any assignment is highly speculative.

CULTURE AND CULTURE-SEQUENCE IN TAMAULIPAS

MacNeish has set up three series of cultural phases in Tamaulipas (fig. 30). In the southern part of the state, only the earliest material, up to Almagre times, is typologically Archaic, but in the north this material continues into the historic period. There are certain differences between the Tamaulipas inventories and those from other regions of northeast Mexico and Texas; the cultural manifestations had generic relationships but, by the time of our first information, had developed distinctive subgroupings. Although full documentation is not possible here, the following judgments are based on detailed analysis of published and unpublished material.

At the present writing, MacNeish's cul-

tural sequence from the Sierra de Tamaulipas (1958) is basic to a picture of this entire eastern region, including Tamaulipas, parts of Nuevo Leon and southern Texas, and probably eastern Coahuila. In regard to MacNeish's earliest or Diablo assemblage, I do not believe that its one distinctive specimen and its other 10 specimens, which can be typologically duplicated in the succeeding assemblage, warrant designation as a separate cultural entity. At the moment, it is more realistic to regard it as an early and meagerly represented component of the succeeding phase.

On the other hand, the differences between the Lerma and Nogales phases deserve more consideration, since the latter has 10 stonework types not present in the former. The pre-Laguna (i.e., pre-Mesoamerican) sequence as a whole, beginning with Nogales and ending with Almagre, is essentially a single cultural continuum or tradition with only minor modifications, some patently due to differential preservation and some representing variations, perhaps, on a widespread, long-enduring, but basically single way of life. I am definitely skeptical that seven additional stone types (out of 50) comprising a mere 33 specimens (out of 1039), over a period estimated at 3500 years, constitute sufficient evidence for the designation of three distinct cultural entities or "phases." The finding of evidence for agriculture in the middle of La Perra level does not really alter the case, as MacNeish appears to believe (1960, p. 593). First, this is undoubtedly a function of differential preservation and, second, the addition of domesticated plants, according to MacNeish himself (1958, pp. 146, 201), does not seem to have made much difference in the aboriginal way of life. The rest of the cultural inventory shows no significant change. The real change comes in the following assemblage, the Laguna phase, in which definitely Mesoamerican traits appear in southern Tamaulipas: intensive agricul-

CALENDAR DATES	RELATIVE DATING		PHASES OF SOUTHWESTERN TAMAULIPAS	PHASES OF SIERRA DE TAMAULIPAS	COMPLEXES AND PHASES OF NORTHERN TAMAULIPAS		COAHUILA COMPLEXES	RADIOCARBON DATES (BP)	YEARS AGO	
	GEOLOGICAL PERIOD	CLIMATE								
	M E D I T H E R M A L	DRY	MESOAMERICAN CULTURES			BROWNSVILLE	MAYRAN JORA		177	
1000		MOIST				CATAN		BARRIL		
AD BC										
1000	WET	TO			ABASOLO		?	1770	2000	
2000	A L T I T H E R M A L	DRY	GUERRA	ALMAGRE				3200 3230 3620	3000	
			FLACCO							4000
				LA PERRA	REPELO					
3000	A L T I T H E R M A L	DRY	OCAMPO						5000	
4000	A L T I T H E R M A L	DRY		NOGALES	NOGALES			6170	6000	
5000	A L T I T H E R M A L	DRY							7000	
6000	COCHRANE	WET	INFIERNILLO					7300	8000	
7000	AND	WET		LERMA				8870	9000	
8000	VALDERS ICE ADVANCES	WET						9300 9540	10,000	
9000	TWO CREEKS INTERVAL	DRY							11,000	
10,000	CARY ICE ADVANCE	WET		DIABLO					12,000	

FIG. 30—Table of cultural phases and complexes, dates, and climate in northeastern Mexico (adapted with modifications and additions from MacNeish, 1958, Table 30, p. 192).

ture, permanent occupation in villages with plazas, house and temple platforms, ceramics.

The Tamaulipan continuum represents a way of life much like that of Coahuila, i.e., largely nomadic with only sporadic, possibly seasonal, use of sheltered sites. In one component of Almagre times there is evidence for wattle-and-daub houses. Except for the perishable material recovered from a single component, the cultural inventory from Diablo to Almagre consists almost entirely of stonework, with a very few specimens of bone, antler, and shell. Projectile points followed generally the same sequence as in Coahuila (and to some extent in Trans-Pecos Texas): leaf-shaped points first, then contracting stem, then various medium- to large-stemmed and notched shapes, and finally small-stemmed and notched types. In Tamaulipas, however, following the leaf-shape points and contemporaneous with the first contracting stems, there is a class of basically triangular points (which has been split into three types on the shape of the base: Abasolo, Nogales, and Tortugas). This general group is numerically dominant from Nogales times onward, continuing as one of the most characteristic shapes until the Mesoamerican period in the south and the historic period in the north. It constitutes one of the major differences between stone artifacts from Tamaulipas (and possibly from the entire northeastern region of Mexico) and the early complexes of Coahuila. But, by the time of the Mayran and Coastal Plain complexes, these triangular types had reached Coahuila and serve to interrelate many of the late cultural levels throughout northeast Mexico and southern Texas. In southern Tamaulipas, the non-Mesoamerican sequence does not extend to small-point times, but in the north these types are part of the late, but still Archaic, inventory. Notable are the evidences for domesticated plants. Since these specimens of squash (*Cucurbita pepo*) and maize (*Nal-Tel*, types A and B)

come from deposits radiocarbon dated at about 2490 B.C., they constitute one of the earliest examples of agriculture in the Americas (Mangelsdorf, MacNeish, Galinat, 1956). Faunal and floral waste reflect environmental changes (fig. 30) and indicate subsistence patterns which appear to involve hunting, a small amount of agriculture by at least La Perra times, and a great amount of collecting wild plants.

For the Sierra Madre of southwestern Tamaulipas, MacNeish set up another eight phases, some of which he says are like phases in the Sierra de Tamaulipas, whereas others fill gaps in that sequence. The finds in the Sierra Madre produced considerable information, particularly in the way of perishable materials. Domestic gourds, squash (*C. pepo*), chile, and possibly runner beans were recovered from the earliest assemblage, the Infernillo, which yielded radiocarbon dates of 6585 and 6245 B.C. (Crane and Griffin, 1958a). It is notable that no maize was found in this context; Bat Cave corn turned up later in the Flacco assemblage, dating around 1800 B.C. (MacNeish, 1958, p. 194). However, MacNeish says that the people from beginning to end of the pre-Mesoamerican sequence were largely collectors despite their knowledge of agriculture. In fact, contrary to what MacNeish appears to believe, the cultural inventory seems to be remarkably similar to that in the Sierra de Tamaulipas, particularly in stonework but in other categories as well, if due allowance is made for expectable local variation, the differential occurrence of perishable materials, and the differences in inventory completeness which certainly must be assumed. I see no reason to isolate these congeries or to give them names different from those of the Sierra de Tamaulipas, at least according to our present knowledge.

It would seem much better to set up two groupings: Diablo and Lerma in one, Nogales-Ocampo-La Perra-Almagre-Flacco-Guerro in the other. Where to put

Infiernillo is a problem which might be resolved by further excavation, but my present hunch is that it belongs with the second group because of its obvious affiliations with Nogales and its greater resemblance to La Perra than to Lerma. However, some new traits do appear, which indicate cultural relationships with other regions of northern Mexico and Texas: net baskets or "purses" on a rod foundation from an Infiernillo context are like those in the Mayran complex of Coahuila; cotton, possibly from the Flacco and definitely from the Guerro, has also been found in the Mayran complex; the quantitative dominance of split-stitch and bundle foundation in coiled basketry is relatively late, as in the Coahuila complex. It should also be noted that the common bean and possibly *moschata* squash were found in the Guerro assemblage, from which also came Bat Cave type of maize.

For northern Tamaulipas and adjacent southernmost Texas, MacNeish set up another series of cultural groupings. One phase he identifies with the Nogales phase of the Sierra de Tamaulipas; five others he calls "complexes" because of their relatively uncertain character. Again I feel that this separation and naming of congeries, on the basis of so little real difference in their inventories and in view of the small collections and the nature of the sites from which they were collected, is highly suspect. This is even more so when MacNeish begins to look upon them and to treat them as culture-historical realities, even actual socio-political units, talking of them, for example, as "the Catan people" (1958, p. 183). Eleven out of 13 Nogales types are also found in the succeeding Repelo complex, i.e., only two "Nogales" types (consisting of ten specimens) are not in both assemblages. Further, when it realized that there are only 61 specimens from all the Nogales phase sites in this northern region, the difference seems too small and the possibility that purely sampling factors are responsible

seems too great to justify the separation, at least at present.

MacNeish says that the early assemblages are inland and represent hunting-and-collecting peoples in small to large groups having an essentially nomadic habit. The later people occupied the coastal zone, often camping on the dunes and relying considerably more on seafood. On a number of these later sites, pottery of Huastec type has been found, suggesting either that the people themselves were of southern affiliations or that there was trade between the less elaborated cultures of the north and their more developed neighbors to the south. MacNeish infers that the later population was small and divided into small nomadic bands which had widespread contacts with other groups in Texas and along the Rio Grande for an appreciable distance upstream from its delta.

Late in 1945, J. T. Hughes made a "highway survey" along the road between Matamoros and Ciudad Victoria, Tamaulipas (J. T. Hughes, 1947). He discovered 11 sites and made lithic collections which are now at the University of Texas. MacNeish, in his report on the Sierra de Tamaulipas, used Hughes' material.

South of Reynosa, Tamaulipas, Antonieta Espejo, of the Instituto Nacional de Antropología e Historia, Mexico, has found a series of sites at the juncture of the Conchos (Tamaulipas) and Lorenzo rivers (personal communication, 1961). One of these produced true Langtry and Shumla points. Another site yielded many large, boldly chipped stone blades typical of the Coastal Plain complex of Coahuila and the material from the Falcon reservoir.

In 1950 and again in 1952, Luis Aveleyra, of the same institution, made surface collections on the Mexican side of the Falcon reservoir in Tamaulipas downstream from Nuevo Laredo (Aveleyra, 1951; Rubin de la Borbolla and Aveleyra, 1953). More or less at the same time, on the United States

side of the river, archaeologists from the U.S. National Park Service and the University of Texas excavated several sites (Cason, 1952; Krieger and Hughes, 1950). The material is characterized by rather large, boldly chipped blades and triangular points. There are also points very much resembling Fragua, Refugio, Abasolo, Almagre, Langtry, and Catan, and there are a few small points after the fashion of Brownsville and Starr types (Suhm and Krieger, 1954; MacNeish, 1958, fig. 50). There is a radiocarbon date of about 2700 B.C. for the Falcon focus (Suhm and Krieger, 1954, p. 565).

CULTURE AND CULTURE-SEQUENCE IN TEXAS

A thorough review of the archaeological culture-history of Texas by Jelks, Davis, and Sturgis (1960) contains an excellent and lengthy bibliography classified by region, county, culture, and topic. Here I shall summarize this material, with other data from northeastern Mexico, to point up cultural and chronological interrelationships.

A study of the inventories of the various classificatory units established for the Archaic of Texas shows that a certain basic way of life was typical over a wide area and a long period of time and was also related to a similar pattern to the south in Mexico. In earlier publications (1956, 1961), I have said that I believed these manifestations to be derived from a single, basic culture, specifically from some form of the Desert culture. More recent study has further indicated that, within the area embracing Texas and north Mexico, there were at least two phrasings of this basic culture, both of which quite certainly stemmed from the common ancestor but each of which, by the period of our first dependable information, had gone its own way to such an extent as to develop what were essentially two second-level basic cultures.

One of these two phrasings has been named the Balcones phase (Kelley, 1947, p. 99; 1959). This includes the Edwards

Plateau aspect, the Aransas focus, and the unpublished Morhiss focus (Kelley, personal communication). Later manifestations, both on the Gulf coast and inland, seem to be descendants and mixtures of these earlier cultures and, since they are certainly not Mesoamerican, must be considered as pertaining to the Archaic cultures being discussed here.

The other phrasing has a provenience largely Mexican. I am calling it the Frontera phase. The recognition of this second-level basic culture seems warranted because a quantitatively significant number of traits characteristic of the Balcones phase are not present, or only rarely so, in the inventories of Frontera phase sites. In the latter, for example, although there is much fire-rock in both sheltered and open sites, there are no great burnt-rock mounds such as are typical of the Edwards Plateau aspect of the Balcones phase in Texas. Basin metates are present only in the later Frontera material and are considered the result of stimulus diffusion from the north, since they appear in company with other northern traits. The typical Balcones phase projectile points—Pedernales, Taylor, Baird, Nolan, Montell, Frio, Bulverde, and others (Kelley, 1947, p. 104; 1959, fig. 2, legend; Suhm and Krieger, 1954, p. 108)—are not found at all in Coahuila, or only in extremely rare instances quite certainly as intrusives. There is a complete absence or a very noticeable scarcity of such common Balcones implements as stone drills, hand axes, choppers, gravers, Clear Fork gouges, off-center stem knives, picks, boatstone, egg-shaped stone pipes, engraved stone tablets, net sinkers, hones, projectile shaft abraders, antler sockets, shell "hoes," and stone-lined pit burials.

Balanced against these negative indications, however, are many positive and basic resemblances: the subsistence economy was undoubtedly very similar or identical, occupation patterns were the same and, by inference, socio-political organization must

have been quite similar, basic implements were the same (their differences largely in stylistic variation), methods and materials of manufacture were the same, and the progressive developments of technology ran parallel in the two phrasings. If we had more perishable materials from Balcones sites, the similarities would probably be even more pronounced.

In this scheme of two generically related but specifically distinct "basic" cultural traditions, the Big Bend aspect (Suhm and Krieger, 1954, p. 52), the Monte aspect (Kelley, 1947, p. 104, note 26; 1959, p. 285), and MacNeish's Tamaulipas material present problems, not serious but requiring mention. The Pecos River focus, the earliest in the Big Bend aspect, is obviously a very specialized and localized development (Epstein, 1960a, p. 140; W. W. Taylor and González Rul, 1960). It has many unique traits and many others characteristic of both the Balcones and Frontera phases. Without much more information and analysis, there is little hope of resolving this uncertainty. The subsequent Chisos focus presents somewhat the same problem, although in its later assemblages the outside influences are both obvious and strong, especially in the appearance of domestic plants. At present, I would place the Pecos River focus as an extreme and geographically very restricted variant of the Balcones phase and the Chisos focus as a variant of the Hueco phase, obviously another Desert culture but with affiliations to the north (Lehmer, 1960, p. 127; Suhm and Krieger, 1954, p. 31).

MacNeish's material from Tamaulipas and the Monte aspect along the Rio Grande (Falcon and Mier foci) also seem to have a basis in the Desert culture, but to which of its two local phrasings they should be attributed is uncertain. Despite an individualized stone industry, particularly a great emphasis on large, boldly chipped blades and medium to large triangular points (characteristics not found in early Coahuila complexes), they appear to be more closely

related to the Frontera phase, mostly because they lack the common types of the Balcones phase and because those central Texas types which they do have are obviously imports. Furthermore, they do not have the burnt-rock mounds. On a quantitative basis, both in type and frequency, their cultural inventory is much more like Frontera than Balcones assemblages. Our scant information on similarities in perishable materials points in the same direction. Finally, despite the fact that early assemblages in Coahuila lack the large, boldly chipped blades and the triangular points, these types do appear in the Coahuila as a unit in the Mayran and in the Coastal Plain complexes. There is no such "package deal" appearance in Texas. A strong tradition of cultural interchange between Tamaulipas and Coahuila seems to have existed both early (from west to east?) and late (from east to west?), but not so strong a one between the Balcones phase cultures and the Frontera phase cultures of either Coahuila or Tamaulipas. However, the highly tentative nature of these assignments must be emphasized.

CULTURE AND CULTURE-SEQUENCE IN PERIPHERAL AREAS IN MEXICO

For the state of Nuevo Leon, we have only the work of J. F. Epstein, of the University of Texas, who conducted a survey in the northern part of the state in the summer of 1960. His findings have not been published but are known through personal communication and a preliminary, mimeographed report. The material has strong similarities with that of the Monte aspect to the north and east and with the Coastal Plain complex of Coahuila. After a little more work in eastern Coahuila, Nuevo Leon, and northern Tamaulipas it will probably be shown that the Coastal Plain complex of Coahuila, most of Epstein's material, and that found by Espejo south of Reynosa all belong in the Monte aspect, along with several of MacNeish's assemblages from inland, north-

ern Tamaulipas. In addition, Epstein found interesting stonework definitely paleolithic in technique and appearance. Like all his finds in Nuevo Leon, these artifacts were strictly surface material, and so chronological placement cannot yet be made, nor can cultural interrelationships be suggested because of the uniqueness of the types.

In San Luis Potosi, a considerable amount of work has been done by nonprofessionals and some survey by Beatriz Braniff, of the Instituto Nacional de Antropología e Historia, Mexico. There has been no professional publication of materials pertaining to the Archaic. The collections which I have seen and which consist entirely of stonework resemble those of the Coahuila and Jora complexes. One notable feature is the large number of notched snub-nosed flake scrapers, slightly variant but generically like the notched and unnotched ones from the Jora and Mayran complexes in Coahuila.

In Zacatecas and Durango, J. A. Mason has done survey and a little test excavation (1936, 1937). Some of his material from the upper Nasas drainage, including Zape, is the same as some from the Mayran and middle to late Coahuila complexes, specifically sewed sandals, scored sotol (?) buttons, contracting-stem and multiple-notch stone projectile points, marine worm tube beads, El Paso Brown (?) pottery. J. C. Kelley has also done survey, but only incidentally, in sites that could be associated with the Archaic.

In eastern Chihuahua, Paul Reiter conducted a field school of the University of New Mexico in 1947, locating sites with Archaic material on ancient lake terraces in the vicinity of Jimenez. Considerable numbers of contracting-stem points were similar to, but somewhat variant from, those of the early Coahuila complex; other types were certainly the same generic style and period as the middle and late Coahuila complex points having stems and notches. Along the Rio Conchos (Chihuahua) from

the Junta de los Rios upstream almost to Chihuahua City, J. C. Kelley, during the course of fieldwork directed toward later sites, found Archaic materials in surface collections. Although this material has not been studied in detail, it seems to bear resemblances to material from Trans-Pecos Texas and northern and northwestern Coahuila. Kirk Bryan also found this type of stonework in western Coahuila and on the Coahuila-Chihuahua border near the mining town of Sierra Mojada, Coahuila.

Ethnohistory and Language

Extended, narrative accounts of aboriginal cultures in this area during historic times have been published by Beals (1932), Alessio Robles (1938), Martínez del Río (1954), and MacNeish (1958). Little new material can be added to the picture. The way of life described in the archival sources is very similar, sometimes identical, to that which can be inferred from the archaeological record as far back as we have information. This means that for the last 10,000 years at least, there was little or no significant culture change and that an essentially Archaic way of life, established in arid North America during the first years of human occupation, endured with no major modification until it was destroyed by pressures of an alien force.

Recently (1961) I discussed my reasons for believing that there was linguistic as well as other cultural continuity in northeastern Mexico and southern Texas. Spanish archival sources give evidence that throughout much of this area dialects of Coahuiltecan were spoken by a numberless multitude of small groups. This language belongs to the Hokaltecan group of Hoka-Siouan. Until recently (Swadesh, 1959) Tamaulipecan was also said to belong to Hokaltecan (F. Johnson, 1940)—and this would make considerable cultural sense—but Swadesh's attribution of Tamaulipecan to Utaztecan may not be completely off, because there is evidence (Martínez del Río, 1954) that at

least some of the Laguneros or Irritilas of southern Coahuila and quite certainly the Zacatecos, who occupied that area in historic times, spoke Utaztecan. It is also probable that the Utaztecan, Tepehuan, and Tarahumar lived much closer to the Laguna District and thus to the desert

peoples of northeastern Mexico than they do today. Taken with the recognized continuity in other aspects of culture in northeastern Mexico and southern Texas, these data suggest that the people of the prehistoric cultures also spoke Hokaltecan and Utaztecan.

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5. Mesoamerica and the Southwestern United States

J. CHARLES KELLEY

THE cultures of the American Southwest are geographically peripheral to those of Mesoamerica—and are very nearly geographically contiguous with them. The Southwestern cultures have the general appearance of attenuated Mesoamerican cultures, and the distributional evidence suggests strongly that they are peripheral and reduced copies of Mesoamerican prototypes. Archaeological evidence indicates, however, that they have a respectable antiquity, evolution *in situ*, and perhaps even independent origins. This enigma has puzzled students of American prehistory for almost a century.

Among Southwestern traits especially Mesoamerican in character are: (1) an agricultural economy based on maize-beans-squash agriculture—plus chili and cotton—and, locally, irrigation; (2) permanent houses and villages, with stone and adobe masonry, conventionalized village plans, plazas, and specialized religious structures including platform mounds, kivas, and ball courts; (3) highly developed technology and artistry in stone, bone, shell, ceramics, and textiles; (4) religious art in murals, ceramics, and weaving; (5) highly organ-

ized socio-political structures emphasizing village hegemony and dual religious and secular leadership; (6) an organized priesthood; (7) well-developed ceremonialism involving curing societies, fertility cults, hunting and war cults, astronomical and nature deities, rain ceremonials, masked dances, god impersonation, horned or feathered serpent deities, with associated bird and amphibian representations, astronomical-ceremonial concepts, directional color symbolism, and an organized utilitarian and ceremonial calendar, culture heroes with dual aspects (such as twin war gods), sun worship, new fire and harvest ceremonials, scalp ceremonials, and possible vestiges of human sacrifice. There also are highly specific Mesoamerican elements such as copper bells, mosaic mirrors, and conch-shell trumpets.

Regardless of the weight of this evidence, Southwestern archaeologists have tended to explain most of the Southwestern developments in terms of local developments. Thus, considerable evidence for multiple, long, regional, evolutionary, and developmental traditions in ceramics, architecture, decorative art, and ceremonialism has been accumu-